

Holophane Datalog

1934
COMMERCIAL
EDITION



HOLOPHANE DATA LOG

Commercial Edition

BOOKLET No. 375-K

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HOLOPHANE COMPANY, INC.

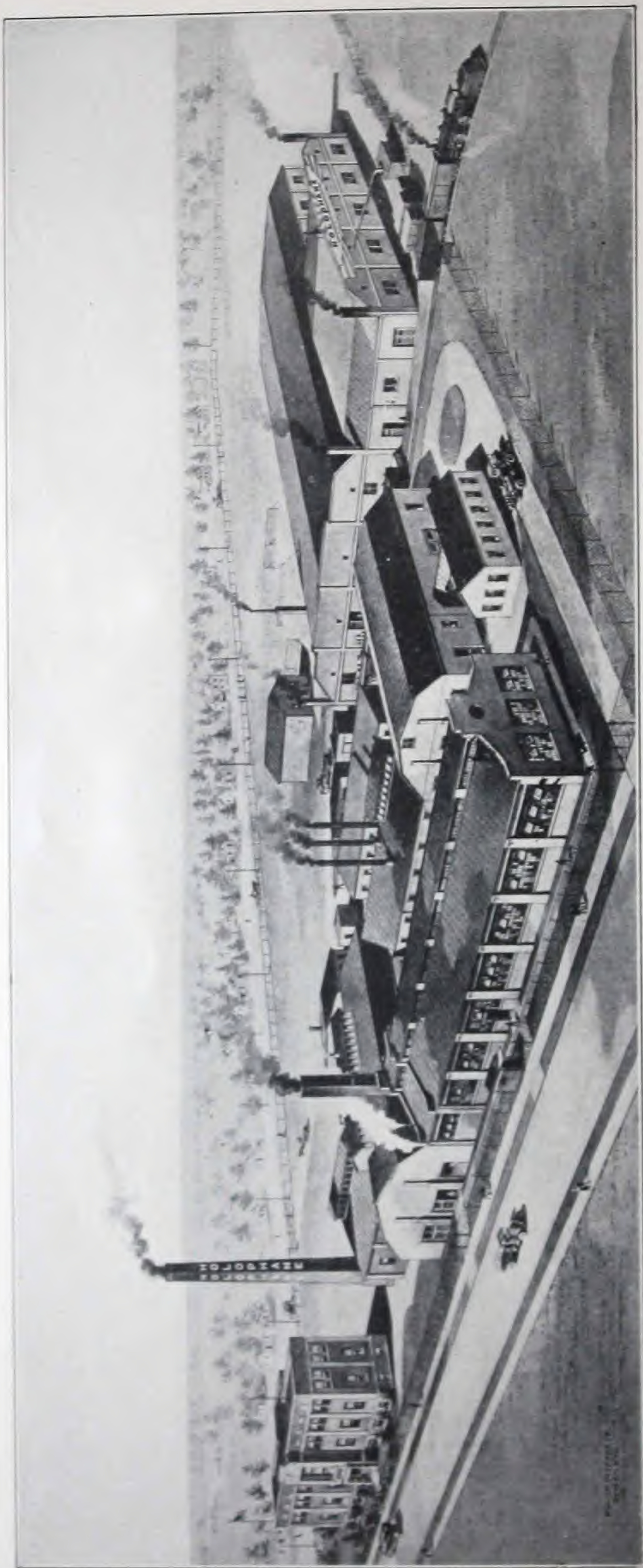
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The Holophane Datalog

THE Holophane Company has combined with commercial information, a short Engineering Section, in the Eleventh Edition of the Datalog. This section includes the general principles underlying all kinds of lighting and omits difficult technical discussion where possible.

Holophane Engineering Policy

The engineering policy of the Holophane Company has been consistent for a period of over thirty-five years. The test of these years proves this policy to be sound.

Holophane believes in and practices *Planned Lighting*. Planned Lighting requires that lighting equipment be designed for specific application.

Devices so designed are called *Specifics*—they are accurately built to meet definite lighting requirements.

Proper arrangement of Holophane Specifics over an area to be lighted gives **Holophane Planned Lighting—best illumination at least cost.**

Since the satisfactory use of Specifics requires planning in advance of installation, the Holophane Company maintains a competent corps of Engineers who may be called upon to draw complete illumination specifications for any lighting project.

These specifications are furnished without charge and there is no obligation on the part of the client to purchase equipment.

Holophane Engineering service is not offered in substitution for, or in competition with the professional services of Architects or Engineers. Its service is usually rendered through the Architect or Engineer to his client and is supplementary to their advice.

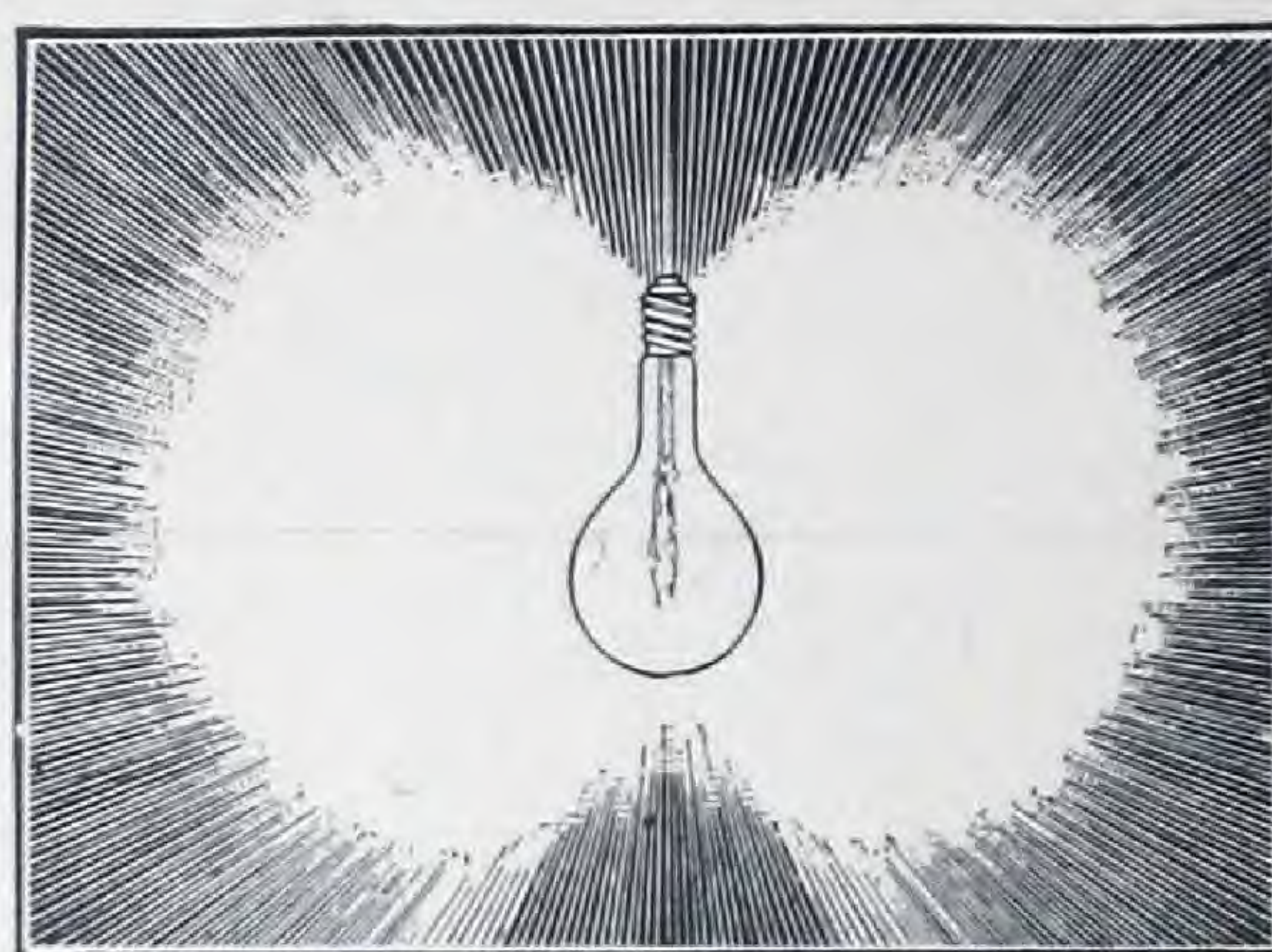
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“Holophane”

THE name HOLOPHANE has always been synonymous with high efficiency in light direction. The reason for such recognition lies in the sound fundamental principles of light control used in the design and manufacture of Holophane lighting equipment. The exceptional ability of Holophane to control light and to direct it can be easily appreciated when thought is given to the simple yet effective means employed.

How to Control Light

Bare lamps give a light distribution like this:—



This uncontrolled distribution of light is wasteful—

1. Because half of the light is transmitted upwards at non-useful angles; much of which is lost.
2. Because a large part of the other half (the downward light) is not directed at proper angles to reach the work area.
3. Because when bare lamps are used, too high a percentage of the raw light reaches the eye direct resulting in glare and making it difficult to see.

Bare lamps are seldom used now but there are many lighting fixtures which are little if any better than bare lamps in light directing characteristics. An enclosing globe of uniform texture, for example, does not redirect light. It merely diffuses or scatters it in all directions. It may be pleasing in appearance but it does not improve the lighting value. The light has been diffused but the distribution has not been controlled.

The most exact means known to science for controlling the direction of light is the glass prism. When a ray of light enters or leaves a glass prism it is bent at an angle depending on the angle of the prism and the angle of striking the glass; something like this:—

HOLOPHANE LIGHT CONTROL



There are definite physical laws which govern these angles of light ray bending (called refraction) well known to science and to Holophane lighting specialists. By varying the shape of the prism and the relation in position of this prism to the lamp filament, light can be directed in any desired direction. The prism can be made to bend the light ray so that it travels directly backward.



This is called "total reflection" and such prisms in Holophane units divert the light from non-useful to useful directions. Careful and precise engineering and manufacture enable Holophane to design prisms which will turn back more of the light rays than by any other method. Since it is not desirable to make this reflection total, in the design of reflector units a small portion of the ray is permitted to pass through the prism to relieve contrast and to provide adequate diffusion.

Every Holophane unit employs these principles and utilizes prismatic designs to obtain the types of units and the distributions of light shown in this Datalog.

It is important to realize that REFLECTION and REFRACTION are accomplished **INSIDE** the glass prism and **not by exposed surface** action. The efficiency of a surface reflector depends on the permanence of the reflecting surface. If the surface deteriorates, the efficiency suffers proportionately and **PERMANENTLY**.

HOLOPHANE LIGHT CONTROL

Holophane Suffers NO PERMANENT DEPRECIATION

Referring to the figure illustrating total reflection, whenever this type of light control is employed the prisms are so arranged that the face of the prism through which the light ray enters is on the **inside** of the light director and is therefore least subject to dust accumulation. The redirecting action takes place on the **inner face** of the prism sides, and dust which falls on the outside of these prism faces **DOES NOT IMPAIR THE LIGHT-DIRECTING QUALITIES**.

The inside surface of the lighting unit provides an entirely smooth surface from which dust is easily removed. Every time a Holophane unit is cleaned* it regains its initial efficiency.

SUMMARY

The difference, therefore, between Holophane and other lighting equipment is that Holophane engineers have made a study in detail of all the various lighting applications and instead of offering standardized reflectors or enclosing globes to spray total areas with light, have developed a series of specific units delivering the most suitable light pattern for the area or process involved. The result is that greater intensities of illumination for reasonable current expenditures are secured and the equipment is mechanically suited for the use to which it is put.

Nature has smiled on Holophane in many ways that add to its effectiveness.

Output Efficiency

The reflecting efficiency of an optical prism is the greatest of any known medium being 99.4% plus. This is the Secret of Holophane's **High Initial Efficiency**.

Utilization Efficiency

Due to nature's laws of total reflection and refraction ANY DESIRED DISTRIBUTION of light can be obtained from a properly designed Holophane unit. Complete advantage is taken of this important natural law to design light distributions that will fit the surfaces to be lighted and thereby **add utilization to initial efficiency**.

Permanent Efficiency

Glass is the most permanent substance that can be worked into useful shapes. Articles made of glass have been found in a state of perfect preservation in excavations of ancient ruins. Crystal glass units alone suffer **no permanent depreciation** when subjected to heat, fumes, acids, gases, moisture and time.

















Color Value

Of all the materials from which reflectors and enclosing globes can be made, crystal glass alone **reflects light in its true color**. All other substances suffer selective absorption thereby coloring the light to a more or less degree. It is important in many processes to have light of good color value.

* Use "Oakite" and water solution.

ILLUMINATING ENGINEERING DATA

Actual Depreciation of Lighting Equipment as Affected by Equipment Design*

Luminaire	Description	Actual Depreciation 120 Days Dry Fine Dust	Luminaire	Description	Actual Depreciation 120 Days Dry Fine Dust
1 	Dense opal glass—clear lamp	11.2	9 	Frosted ball—top and bottom open	15.0
2 	Prismatic glass—clear lamp	12.4	10 	Semi-closing opal bowl with diffusing plate	27.2
3 	Deep enameled steel bowl—clear lamp	11.5	11 	Dense opal bowl	22.5
4 	RLM Dome—clear lamp	12.8	12 	Enameled metal reflector with opal glass bottom	26.0
5 	RLM Dome—bowl-enameled lamp	16.3	13 	Mirrored glass bowl	26.2
6 	Diffusing globe and enameled steel reflector	22.9	14 	Clear top with bottom opening	35.6
7 	Diffusing globe—no vent	13.4	15 	Clear top without bottom opening	15.0
8 	Diffusing globe—bottom vent	22.7	16 	Prismatic, without bottom opening	10.1

* Transactions of Illuminating Engineering Society, Anderson and Ketch, Vol. XIX, No. 1.

Luminous Flux Emitted by Mazda Lamps (Standard Lighting Service 110-125 Volts)

Size of Lamp Watts	Type Bulb	Lumens	Light Center† Inches	Overall Length Inches (Max.)
15	A-17	137	2 ³ / ₈	3 ⁵ / ₈
25	A-19	250	2 ¹ / ₂	3 ¹⁵ / ₁₆
40	A-19	428	2 ⁷ / ₈	4 ¹ / ₄
50	A-21	575	3 ³ / ₈	4 ¹⁵ / ₁₆
60	A-21	738	3 ³ / ₈	4 ¹⁵ / ₁₆
75	A-21	1028	3 ⁷ / ₈	5 ⁵ / ₁₆
100	A-23	1490	4 ³ / ₈	6 ¹ / ₁₆
150	PS-25	2400	5 ¹ / ₄	6 ¹⁵ / ₁₆
200	PS 30	3400	6	8 ¹ / ₈
300	PS-35	5400	7	9 ⁷ / ₁₆
500	PS-40	9700	7	9 ¹³ / ₁₆
750	PS-52	14500	9 ¹ / ₂	13 ¹ / ₈
1000	PS-52	20000	9 ¹ / ₂	13 ¹ / ₈
1500	PS-52	32000	9 ¹ / ₂	13 ¹ / ₈

† Light center length is distance in inches from contact point of lamp to center of filament.

ILLUMINATING ENGINEERING DATA

The illumination intensities in foot-candles measured on a horizontal plane (unless otherwise noted) shown in the following table are a guide to modern economical practice. Higher intensities are sometimes desirable to meet special conditions or requirements. The intensities indicated are above the average but are based on a conservative estimate of the average of good modern installations.

A GUIDE FOR MODERN ECONOMICAL ILLUMINATION INTENSITIES

COMMERCIAL LIGHTING

TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC	TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC
Aisles	3	21, 31	Handball Court (General)	15	52-43
Armory:			(On playing wall)	25	43
Drill Shed	10	24	Indoor Tennis Court	15-100	24, 43, 47
Exhibition Hall	10	16-17	Locker Rooms	10	30, 31
Offices	10	18-19	Main Gym Floor	15	24, 43, 47
Art Gallery:			Racquet Court	15-100	52-43
General	10	Controlenses	Shower Room	10	29
Paintings	20	51	Squash Court	15-100	52-43
Auditoriums	10	16 to 20, 46-50	Swimming Pool	10	Special
Automobile Show Rooms	15	18 to 20			
Banks:			Halls, Interior Passageways	5	46, 42, 49
Cages and Offices	15	18 to 20	Hockey Arena	25	24
Lobby	10	Orn. Holophane	Hospital:		
Barber Shops	15	18 to 20	Ambulance Entrance	1.0	30-31
Billiard:			Bacteriological Room	20	16-17
Room	5	Special	Barber Shop	20	18 to 20
Tables	25	Special	Battery Room	5	29
Bowling Alleys:			Chart Room	10 Vertical	21
Alley	10	13	Coat Room	5	53, 54
Pin Pit	25	43	Corridors	5	21, 42, 49, 50
Boxing Arenas	100-1200	24	Cystoscopic	20	16-17
Broadcasting Studios		43, 46-50	Dental Surgery:		
Cafe:			Dental Chair	50-200	41-43
General	10	43, 46-50	General	10	18 to 20
With Table Lights	5	and 20	Diagnostic Room	20	18 to 20
Churches:			Electric Equip. Space	5	26-27
Church School Room	10	18 to 20	Examining Room	10 General 150 Local	18 to 20, 38
Nave	5	43, 46 to 50	Fracture Room	10 General 150 Local	18 to 20, 38
Pulpit	10	Special	Garage	5	29, 33
Sanctuary	10	12-13	Instrument Room	10	18 to 19
Club Rooms:			Kitchen	10	16-17, 48
Lounge	5	Orn. Holophane	Labor Room	2	39
Reading Room	10	18 to 20	Laundry	15	16-17
Court Room	10	18 to 20	Library	20	18 to 20
Dance Halls	15	Special	Linen Room	5	16-17
Dental Offices:			Lockers	5 Vertical	21
Dental Chair	50-200	41-43	Offices	10	15 to 20
Operating Office	10	18 to 20, 38			
Waiting Room	5	16 to 20	Operating Rooms:		
Depot: Waiting Room	5	18 to 20	Delivery	200 Hor. 300 Ver.	41-43
Doctors' Offices	10-200	38	Emergency	300 Hor. 100 Ver.	41-43
Drafting Rooms	25	18, 19, 20, 52	Major	1000 Hor. 250 Ver.	40-41
Elevator:			Obstetrical	1000 Hor. to	40-41
Freight	5	46, 48	Septic	1000 Hor. 750 Ver.	40-41
Passenger	5	46, 48	Minor	300 Hor. 100 Ver.	41-43
Fire Engine House:			Plate Room	5	16-17
Normal Times	5	16-17	Radio Room	5	16-17
When alarm is turned in	15	16-17	Rest Room	5	18 to 20
Garages:			Service Room	10	16-17
Repair	15	26, 27, 33	Sewing Room	15	18-20
Storage—Dead	1	33-34	Staff Rooms	10	18 to 20
Storage—Live	2	33-34	Sterilizing Rooms	10	16-17
Washing	20	29	Telephone Space	5	16-17
Gymnasiums:			Therapy	5	18 to 20
Base Ball (Indoor)	25	24	Toilets	5	53-54
Basket Ball	25	24, 43, 47	Utility Rooms	5	16-17
Fencing, Boxing, Wrestling	25	24, 43, 47			

ILLUMINATING ENGINEERING DATA

COMMERCIAL LIGHTING

TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC	TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC
Wards:			Concourse	5	24, 47
Private	5	39, 50	Rest Rooms	5	18 to 20
Public	3	39, 50	Smoking Room	5	18 to 20
Semi-Private	4	39, 50	Storage	2	32-33
Yard Space	0.25	33-35	Ticket Office	10	18-19
Hotels:			Train Platforms	5	30
Bedrooms	10	18 to 20	Waiting Rooms	5	18 to 20
Corridors	5	21	Restaurants	10	Orn. Holophane
Dining Room	5	43, 46-50	Schools:		
Kitchen	10	16-17	Art Room	15	16 to 20
Lobby	5	43, 46-50	Auditorium	15	16 to 20
Writing Room	10	18 to 20	Cafeteria	10	16 to 20
Libraries:			Class Rooms	15	16 to 20, 50
Reading Rooms:			Corridors	5	21
With Table Lights	5	18 to 20	Domestic Science	15	16-15
Without Table Lights	10	18 to 20	First Aid Rooms	10-200	38
Stack Room	10	21	Gymnasium (See this General Heading)		
Lodge Rooms	10	18 to 20	Janitor's Closets	2	53-54
Lunch Cars	10	16-17, 53-54	Kitchen	15	16-17
Markets	10	14 to 19	Laboratories	15	16-17, 29
Mortician	10-200	38, 41	Locker Room	5	21
Moving Picture Theatres:			Manual Training Shop	15	26-27
Auditorium	3	43, 46-50	Offices	10	18 to 20
Entrance	25	43, 46-50	Over Stage	15	23-24, 28
Foyer	5	43, 46-50	Stairs	5	53-54
Museum:			Toilets	5	53-54
General	5	Controlenses	Skating Rink (Indoor)	10	24
On Special Exhibits	25	43, 48 to 51	Stores:		
Taxidermist	10-200	38	Department	20	11, 18 to 20, 46 to 50
Office Buildings:			Small:	15	11, 14, 18 to 20
Basement Storage Rooms	2 Vertical	32-33	Art	15	18 to 20
Battery Room	5	34	Automobile	20	11, 18 to 20
Carpenter Shop	10	26-27, 28	Bakery	15	11, 16-17
Corridors	5	21, 46, 49	Barber Shop	20	18 to 20
Electrician Shop	10	26-27, 28	Beauty Parlors	15	18 to 20, 43, 48
Elevators	5	46, 48	Books	10	11, 14, 18 to 20
Entrance Hall	10	†	Butcher	10	11, 14, 16-17
Executive Offices	10	†	Carpet	10	18 to 20, 43, 46-50
File Room	10 Vertical	21	Cigar	15	11, 16-17, 46 to 50
Fire Stairs	2	53, 54	Clothing	15	11, 16 to 20, 46 to 50
General Office Space	15	15 to 20	Confectionery	10	11, 14, 18 to 20
Hall-Elevator	5	16-17	Drugs	15	11, 14, 16-17
Janitor's Stores	5	26-27	Dry Goods	15	11, 14, 18 to 20
Locker Rooms	5	21	Florist	10	11, 14, 16, 17
Paint Shop	10	26-27	Furniture	5	18 to 20, 46 to 50
Passage:			Furrier	15	18 to 20, 46 to 50
Freight Elevator	5	29	Grocery	10	11, 14, 16, 17
Plumbing Shop	10	26-27	Haberdashery	15	11, 18 to 20, 46 to 50
Private Offices	15	18 to 20, 43, 46-50	Hardware	10	11, 14, 16, 17
Stairs	5	53-54	Hat	10	18 to 20, 46 to 50
Toilets	5	53-54	Hosiery	15	18 to 20, 46-50
Vaults	5	21, 42, 48	Jewelry	10-50	11, 16-17, 46 to 50
Post Offices:			Leather	10	11, 16-17, 46 to 50
Cancellation Machine	15	26-27, 28	Liquor	10	14, 31
Carriers' Paper Case	9 Hor. 8 Ver.	26-27, 28	Millinery	15	18 to 20, 46 to 50
Carrier Routing Cases	14 Hor. 8 Ver.	26-27, 28	Music	10	18 to 20, 46 to 50
City Letter Cases	7 Hor. 8 Ver.	26-27, 28	Notions	10	11, 18 to 20, 46 to 50
Clerks' Letter Separation Cases	11 Hor. 7 Ver.	26-27, 28	Piano	10	18 to 20, 46 to 50
Collection Table	15	26-27, 28	Rug:		
Dispatch Desk	15	26-27, 28	General	15	18-20, 43, 46-50
Parcel Post Separation Racks	15	26-27, 28	Racks	25	12, 13, 43, 51
Public Lobby	10	16-17	Shoes	15	18-20, 46 to 50
Registry Cage	15	26-27, 28	Stationery	10	11, 18-20, 46 to 50
Time and Special Delivery Desk	15	26-27, 28	Show Windows:		
Vestibule	10	16-17	Business District	100	12, 13
(For other spaces see "Office Buildings")			Suburban	40	12, 13, 14
Railway:			Whiteway	200-500	13
Baggage Checking Office	10	16-17	Telegraph	15	18-20
			Telephone:		
			Automatic Switching	5	21
			Horizontal	5	21
			Vertical	3	21
			Veterinary	10-200	38, 41

† Use ornamental designs. Sketches furnished on request.

ILLUMINATING ENGINEERING DATA

INDUSTRIAL LIGHTING

TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC	TYPE OF INTERIOR	FOOT-CANDLES RECOMMENDED	SEE PAGE NO. FOR HOLOPHANE SPECIFIC
ACID PLANTS	5	29	Composing Benches	10	30, 31
AVIATION FIELDS:			Cutting Machines	10	26-27, 28
Boundary Lights	*	53-54	Electrotype Stores	15	21, 30, 31
Hangar Apron	2	34-35	Flat Bed Presses	10	35
Hangars	10	24	Job Presses	10	35
Obstruction Lights	*	53, 54	Linotype Machines	5	30, 31
BREWERIES:			Meihle Presses	10	30
Boiler Room	10	26, 32	Newspaper Presses	10	30
Bottling	15	26	Plating Rooms	5	29
Brew House	2	33	Routing	10	53, 54
Chemical Laboratory	10	30	ROUND HOUSE	5	30-31-34-35
Engine House	10	24	SILK MILLS:		
Loading Platform	2	33	Dyeing:		
Pasteurizing	15	26	Dry Rooms	10	26-27, 28
Stairs	5	26	Wet Rooms	10	29
Warehouse	1	33	Doubling	15	30, 31
Wash House	10	29	Examining	15	30
CHEMICAL PLANTS	5	29	Looms:		
COTTON MILLS:			Back	5	25
Breaking	6	26-27	Front	30	26-27
Carding	10	26-27	Quiller	15	31
Intermediates	10	26-27	Single and Double Deck		
Looms	10	26-27	Winding	15	31
Slubbers	10	26-27	Spinning	15	31
Warpers:			Warping:		
Beam	10	26-27	Beam	10	23
Creel	10	30-31	Creel	10	23
Reed	15	26-27	Reed	20	26-27
DISTILLERIES:			Twisting	15	26-27
Alcohol Storage	2	29	STEEL MILLS:		
Alcohol Supply	5	30	Annealing Furnace	5	24
Blending Room	5	30	Bessemer Converter House	5	32-35
Bottle Washing,			Bessemer Blower-Platform	2	32-35
Labeling, etc.	10	30	Billet Storage Yards	1	32-35
Fermenting	5	30, 33	Blast Furnace	2	32-35
Mill	5	29	Blooming Mill	10	24
Shipping Room	10	26	By Product Ovens	1	32-35
Shipping Platform	3	33	Chipping	30	24
Still	3	29	Cold Rolling	15	24
Storage	3	33	Cooling Table	10	24
FOUNDRY:			Hot Mills	10	24
Core Making	15	23	Inspection	15	24
Mould Making	15	23	Lay-out and Fabrication	10	24
Pouring	10	24	Machine Shops	15	24
Sand Mixing	5	24	Nail Making	10	24
Storage	2	32-33	Open Hearth Casting Floor	5	24
GASOLINE FILLING STATIONS	5	32-35	Open Hearth Charging Floor	5	24
GENERAL MANUFACTURING—FINE	15	26-27	Open Hearth Mould Yards	0.5	32-35
GENERAL MANUFACTURING—ROUGH	10	26-27	Outdoor Craneway Scrap		
HOSIERY MILLS:			Storage	2	24
Footers	20	31	Pickling	5	34-35
Knitters	20	30	Pipe and Tube Mills	10	24
Leggers	20	31	Pipe Threading	15	24
Loopers	15	26	Power Plants (Turbine		
Seamers	15	13	Rooms)	10	24
INDUSTRIAL YARDS	0.25	34-35	Puddling Furnaces	5	24
MACHINE SHOPS			Rail and Structural Mills	10	24
(HIGH BAYS)	15	24	Reheating Furnaces	5	24
MACHINE SHOPS			Shearing	10	24
(LOW BAYS)	15	26-27	Shipping	5	24-32-33
OIL REFINERIES	1-5	29-32, 35	Soaking Pit	5	24
OUTDOOR SUB-STATION	0.5	36	Stripping Yard	1	24
OUTDOOR TENNIS COURTS	25	24	Thoroughfares	0.2	32-35
PARKING GARAGES	2	32-35	Tinning	10	24-32-35
PRINTING:			Tin Plate Soaking and		
Bindery	10	26-27, 28	Inspecting	15	53, 54
Collating	10	30, 31	Warehouses	2	32-29
			Wire Drawing	15	24
			WAREHOUSES	2	32-33
			WATCHMAN'S CIRCUITS	1	32-33
			WATCHMAN'S GATE	1	32-33

*For these lights, maximum brightness of the unit is the desirable quality and not foot-candles on a definite plane.

HOLOPHANE SPECIFICS FOR STORE LIGHTING



SE-900-910

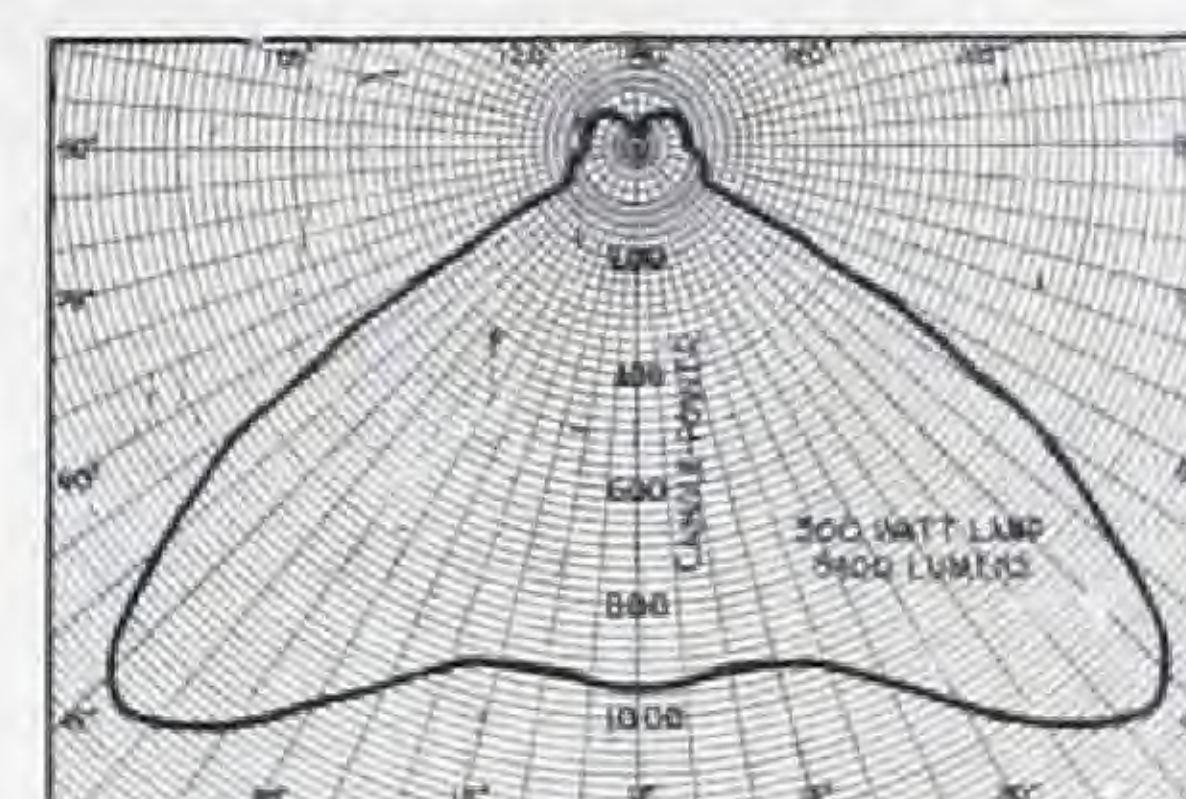
"Gloria"



Hale Bros. Stores, Inc., San Francisco



CE-900-910



Characteristic Distribution

The new "Gloria" unit meets every requirement for the lighting of department and other stores. It conforms to modern standards of style in store architecture and equipment. It directs the rays of light downward in a wide, uniform, spread of illumination over every display table, wall case and counter. With "Gloria" there are no glare spots nor dim areas to delay the customer's choice.

"Gloria" offers Holophane efficiency in a new attractive form by combining a white glass outer of modern attractive contour with an efficient Holophane reflector. The two in combination provide:

1. Distribution of light without fixture shadow or glare.
2. Concentration of light on merchandise without "spotlight" effect.
3. Sufficient diffused upward light to avoid appearance of darkened ceiling.
4. Broad even distribution of light over entire salesroom area.
5. True color, texture, appearance as under unobstructed light.

Fixtures are No. 22 gauge brass of smooth contour design. Ceiling type fixtures are provided with canopy crossbar and barrel nuts for mounting. Suspension fixtures are of rigid stem, ball and swivel construction with drop canopy and terminate in a $\frac{3}{8}$ " female hickey for direct attachment to outlet box stud.

The prismatic reflector is supported on a tripod carried on the heel of the diffusing envelope. The reflector and diffusing envelope are removed as a unit for maintenance.

All fixtures are furnished with an easy-to-wire porcelain socket. No. 16 AF wire is furnished but fixtures are NOT wired.

Standard finish: Satin nickel. Dull Brass, acid bronze and Duco finishes can be furnished at no extra cost. Other finishes quoted on request.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	Distribution	List Price Complete	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp	Holders
							Diameter	Depth		
CE-900	0608	E-900	Extensive	\$14.00	4	92	11"	15 $\frac{1}{2}$ "	200	5"
SE-900	0584	E-900	Extensive	16.00	4	100	11"	36"	200	5"
CE-910	0609	E-910	Extensive	20.00	3	105	14 $\frac{3}{8}$ "	19 $\frac{3}{4}$ "	300	6"
SE-910	0588	E-910	Extensive	22.00	3	120	14 $\frac{3}{8}$ "	36"	300	6"

HOLOPHANE SPECIFICS FOR SHOW WINDOWS

Holophane Show Window Specifics

Show windows are magnets that draw prospects into the store. They compel attention to well planned, attractively displayed merchandise. The power of a window to arrest the attention of passersby is a measure of its effectiveness.

Light plays an important part in "setting off" window displays. Day or night, every window display needs lighting treatment. Objectionable shadow conditions existing in the daytime are wiped out by proper lighting. The necessity for correctly directed light, of proper quality and quantity, for night use, is obvious.

Holophane show window specifics meet every window lighting requirement. They are available for all types and sizes of windows, can be supplied for various methods of installation and at all times maintain their high quality of light direction.

Discriminating merchants use, and the best dealers sell

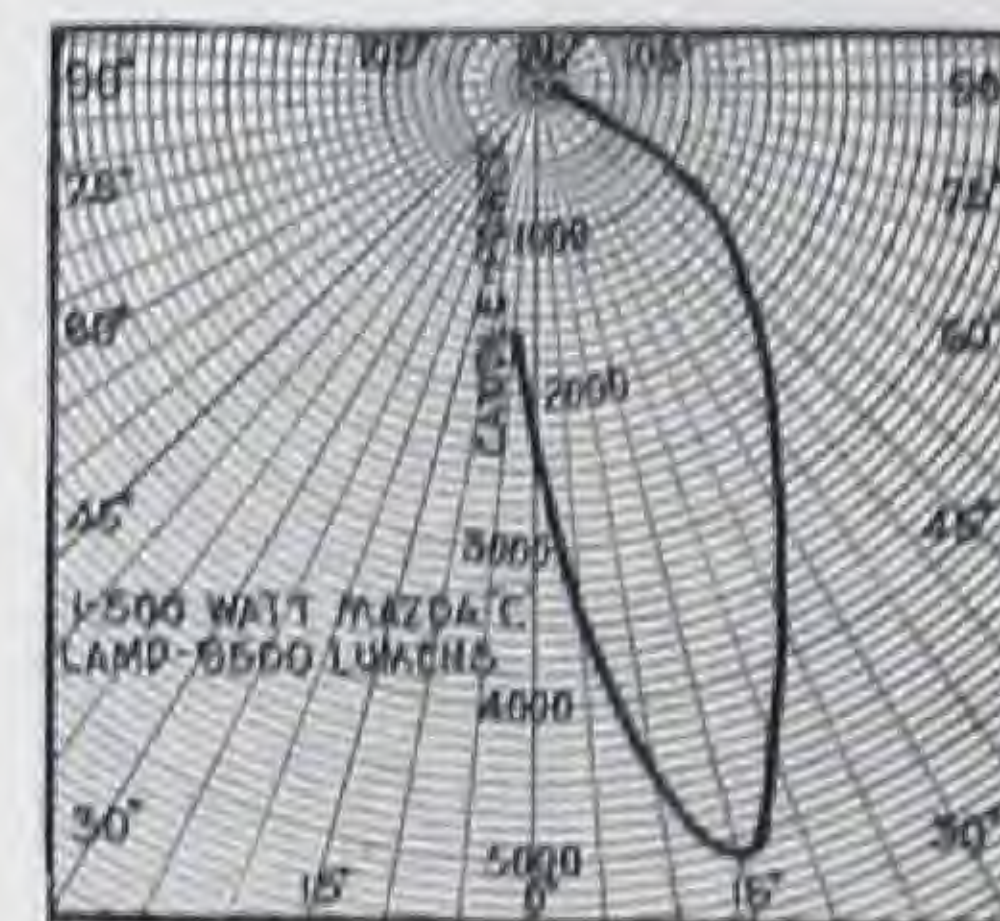
Holophane Window Reflectors because

1. They deliver more light **on the display**—The prismatic construction actually controls the light.
2. They automatically light the transparent sign—No decrease in normal output.
3. Nothing to tarnish or peel off—Heavy pressed prismatic glass withstands usage.
4. No permanent depreciation—A cleaning restores the initial efficiency.
5. Lamp not seen from the street or the inside of the store—glare eliminated.
6. Does not change color of light—Shows articles in their "true color."
7. Color effect can be obtained by colored lamps or color filters.
8. Heavy pressed glass reduces breakage to a minimum—No frequent replacement.
9. They **Cost Less**—but give **more light**.
10. Individual carton packed.

Holophane Controlens Unit For Show Windows



Triple tandem Unit
No. 955-3 with two
lenses removed to show interior.



Characteristic Curve.
One Lamp Burning.

Description: These units consist of complete fireproof metal housing; chromium plated copper reflectors; compound and simple lenses in tandem; wiring devices and sockets; all assembled, ready to install but not wired; inside lined with asbestos and sash finished in black duco. They are made in single and triple sections and may be supported by angle iron sleepers hung from above or fastened to channels that carry the metal lath.


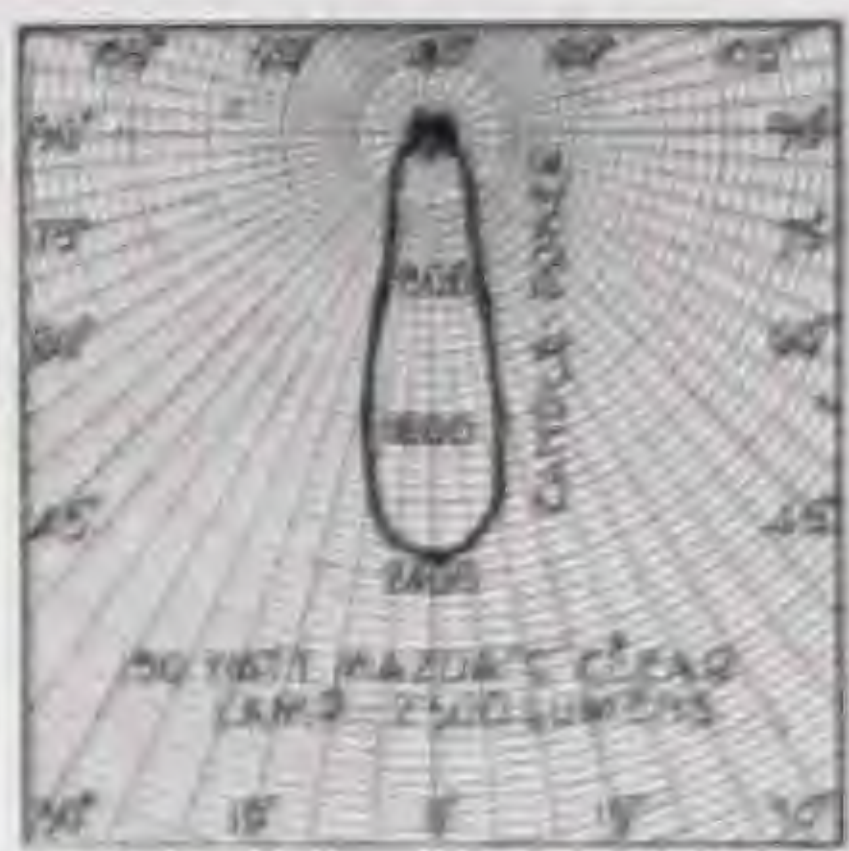








Use: For Super Lighting (High Intensity) in windows the depth of which is not greater than the height to the lenses. Write for installation data giving length, height, width, and ceiling construction of window to be lighted.

SCHEDULE "I" DISCOUNTS

Catalog No.	List Price	Standard Quantity	Shipping Weight Std. Qt.	Dimensions		Mazda Lamps
				Length	Width	
955-1	\$44.00	1	70	12 $\frac{7}{8}$ "	2'-5 $\frac{1}{2}$ "	1-500W.
955-3	110.00	1	96	3'-11 $\frac{1}{2}$ "	2'-5 $\frac{1}{2}$ "	3-500W.

HOLOPHANE SPECIFICS FOR SHOW WINDOWS

SCHEDULE "R" DISCOUNTS

Catalogue No.	Characteristic Distribution Curve	List Price Each	Standard Quantity	Shipping Weight Std. Pkg.	Dimensions in Inches			Mazda Lamp
					Diameter	Height	Holder	
 No. 963		\$3.00	8	23	10 $\frac{5}{8}$ "	5 $\frac{1}{4}$ "	2 $\frac{1}{4}$ -H	100†-150
USE: For medium sized shallow windows. SPACING: 12 inches on center. May be spaced as close as 11 inches. Not recommended more than 18 inches apart.								
 Nos. 981-983		981 \$2.00 983 \$3.00	30 8	60 23	8 $\frac{1}{2}$ " 10 $\frac{3}{8}$ "	5" 6 $\frac{1}{2}$ "	2 $\frac{1}{4}$ -H 2 $\frac{1}{4}$ -H	100 100†-150
USE: For small and medium sized, average depth windows. SPACING: No. 981—9" to 12" on centers never more than 18". No. 983—12" on centers never more than 18".								
 No. 922		\$4.50	8†	42	9 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "	2 $\frac{1}{4}$ -H	100†-150
USE: For medium sized windows of average depth with open backs and island windows. SPACING: 12 inches on center. May be spaced as close as 10 inches. Not recommended more than 18 inches apart.								
 No. 938 with Bottom Plate Pendant		\$6.00	8†	80	12"	7 $\frac{3}{8}$ "	2 $\frac{1}{4}$ -O	150
DESCRIPTION: Combination of prismatic reflector and special lens in one unit with metal neck to permit use of "O" position holder. Installed flush, supported by ceiling flange, with BX running from top of socket to outlet box or conduit. The lens is held in separate frame connected by hinge to flange housing holding reflector, and when in place is fastened by a screw catch. Both reflector and lens can be separately removed from the metal housing flange for cleaning. SPACING: 12 to 15 inches on center.								
 No. 944		\$6.00	8†	90	10"	9 $\frac{1}{4}$ "	2 $\frac{1}{4}$ -O	200
USE: For large windows with open or closed backs and for island windows. SPACING: 12 inches on center.								

† Use $\frac{3}{4}$ " socket extension with 100 watt lamp, or change to Form "O" holder.

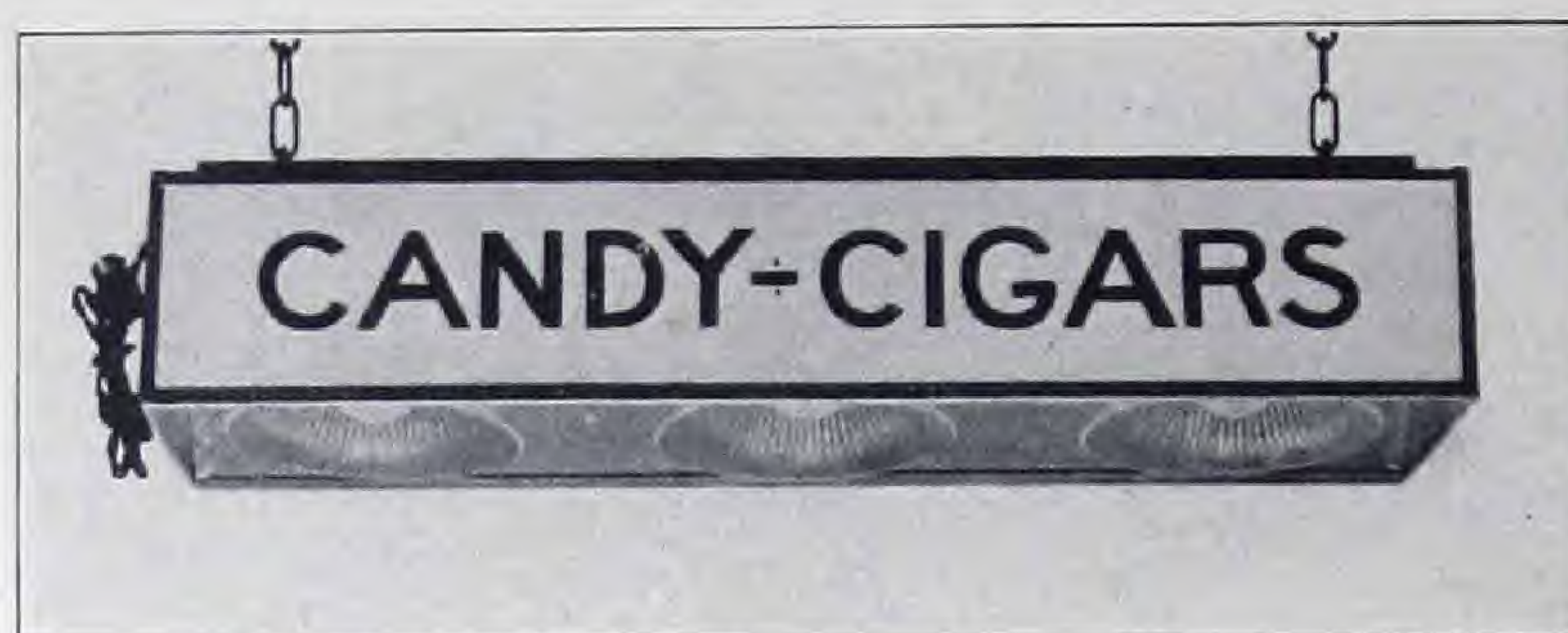
Color filters for any of the above reflectors consisting of 4 filters (1 red, 1 green, 1 blue and 1 amber) can be purchased at \$5.80 list, per set; standard quantity same as reflector on which they are to be mounted.

† These units are packed in individual cartons.

HOLOPHANE STORE LIGHTS AND WINDOW LIGHTING TROUGH



SL-200



T-981-3



ST-200

Store Lights

Certain stores, notably grocery, liquor and drug stores, arrange their stock on shelves along the wall. Light is one of the best known media for attracting attention to such displays. Holophane No. ST-200 concentrates the light on the stock shelves and counters, delivering 100% more light than ordinary diffusing globes using equal wattage.

The Holophane store light is a simple sphere suspended on a $\frac{5}{8}$ " stem terminating in a slip ceiling canopy. A clear crystal prismatic hemisphere composes one-half of the sphere and is attached by a hinged ring to the upper opaque half. Internal construction includes an etched aluminum reflector and a medium base receptacle properly positioned for a 200 watt lamp. Relamping is affected by releasing a spring catch and swinging the prismatic hemisphere on the hinge. It is furnished tilted for shelf and counter lighting and level for "straight down" counter lighting or for augmenting tilted units in very wide stores.

Install No. ST-200 directly over the customer's edge of counter and No. SL-200 directly over center of display counter. Maximum spacing not to exceed ten feet. Standard fixture length is correct for stores having a ceiling height under 11 feet. For higher ceilings specify extra length proportional to added height.

Window Trough

Many small stores have no window lighting at present but have a ceiling fixture. Good window lighting with the added advantage of an illuminated sign can be inexpensively provided by No. T-981-3 Window and Sign Specific and with no installation cost.

This unit is complete with three prismatic reflectors mounted on porcelain sockets held in a concealed wireway, and wired with four feet of extension cord terminating in a male plug. The side for installation toward the window contains a white glass panel on which the user can have painted a sign which, when the unit is lighted is evenly and brightly illuminated by the prismatic reflectors. Use 100 watt inside frosted lamps.

The outside of the trough is finished sprayed bronze and the inside sprayed aluminum. Chains and hooks are provided for attaching to the ceiling and installation should be such that the top of the unit is level with or six inches below the top of the window glass.

SCHEDULE "R" DISCOUNTS

Catalog No.	List Price	Std. Quant.	Ship. Weight Std. Quant.	Dimensions		Mazda Lamp
				Diameter	Depth	
ST-200	\$12.00	4	40	10 $\frac{1}{4}$ "	30"	150*-200
SL-200	12.00	4	40	10 $\frac{1}{4}$ "	30"	150*-200
T-981-3	25.00	1	25	Length	Depth	3-100W-IF
				3'-0"	8 $\frac{3}{4}$ "	

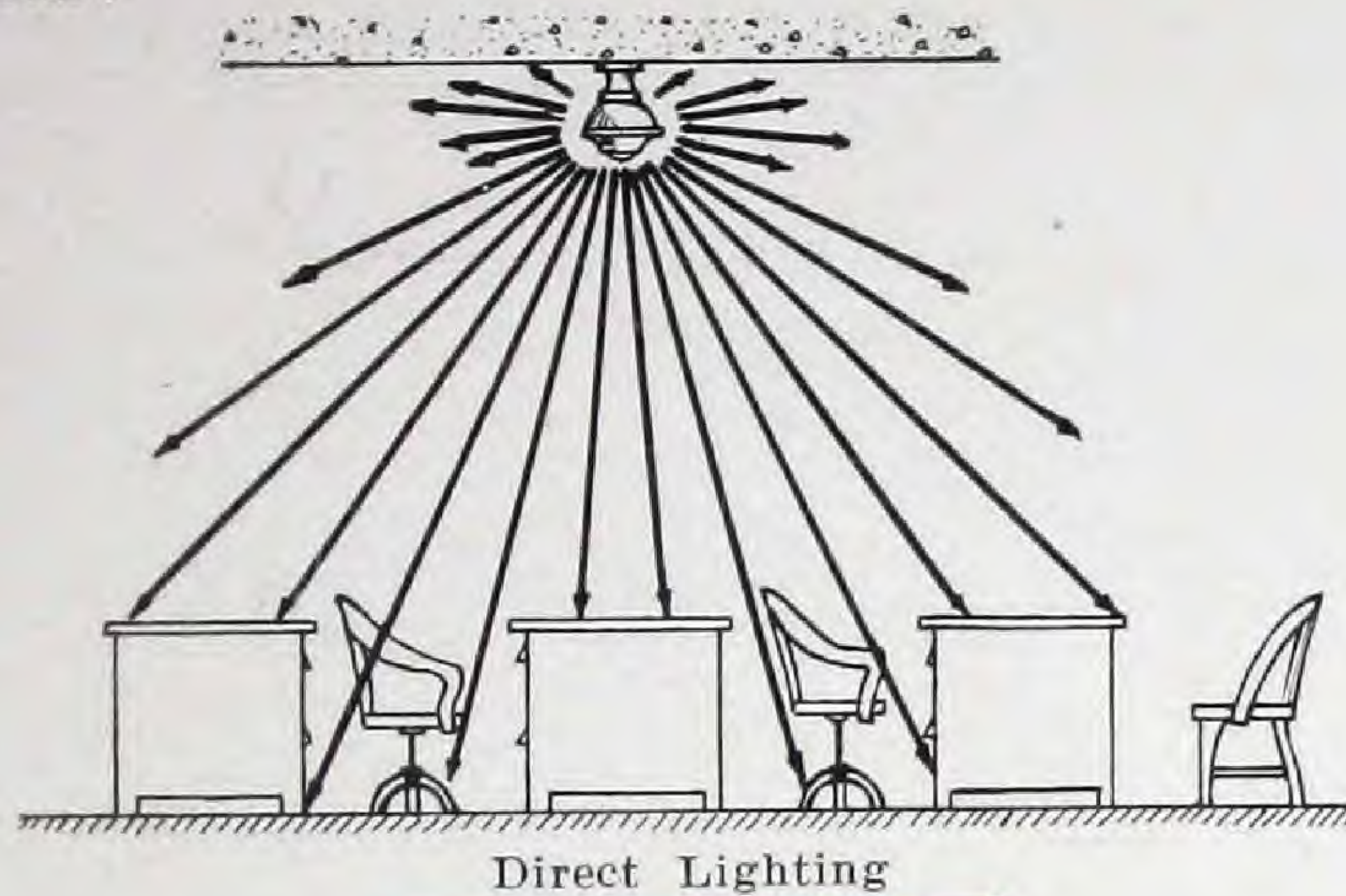
* Use $\frac{7}{8}$ " socket extension with 150 W. lamp.

HOLOPHANE GENERAL LIGHTING SPECIFICS

There are three broad classifications of general lighting equipment.

Direct Lighting:

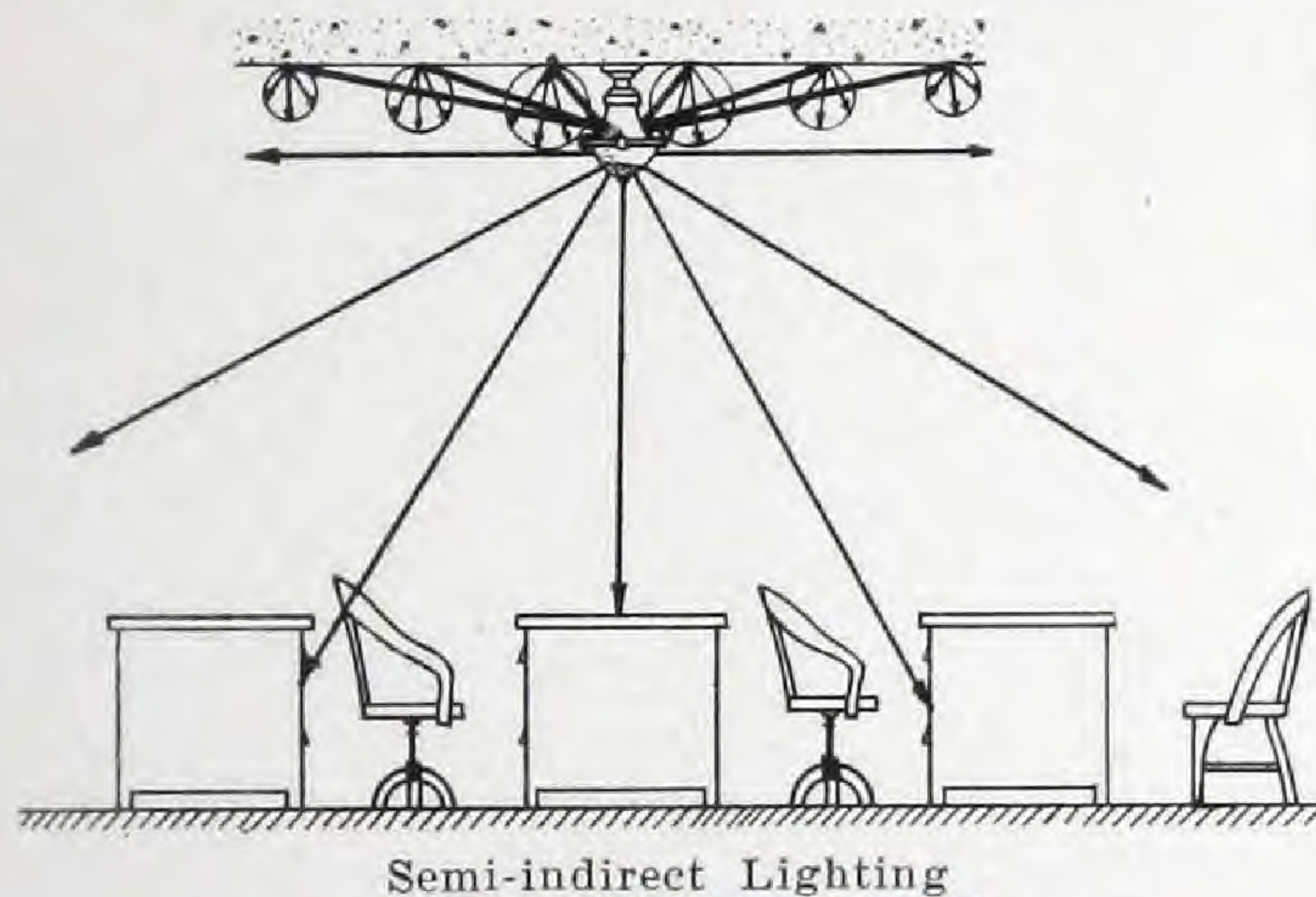
Direct lighting units send most of the light rays directly from the source to the work thus:



Holophane Reflector-Refractor
Direct Lighting Specific

Semi-Indirect Lighting:

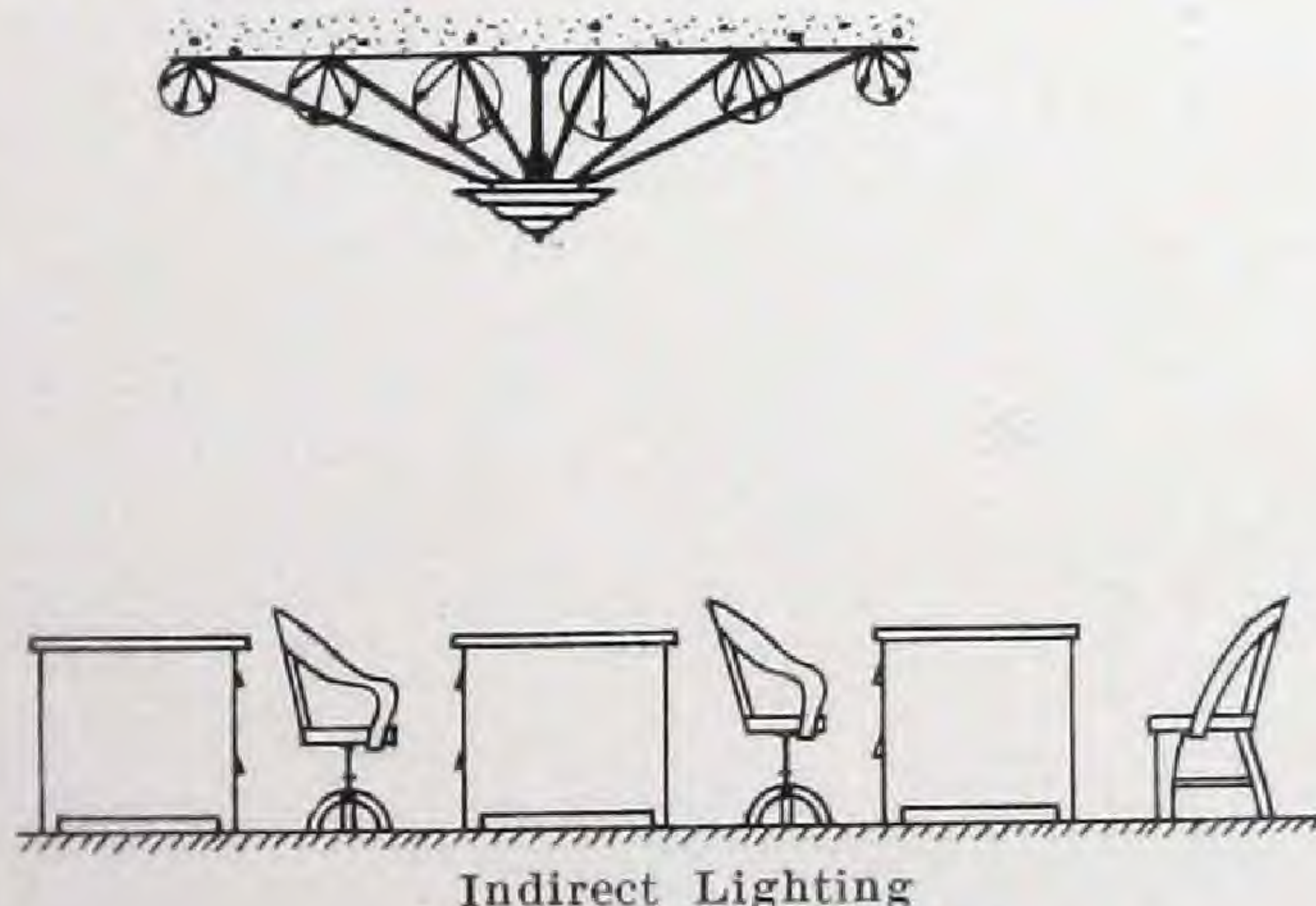
Semi-indirect lighting units permit some of the rays to reach the work directly but the majority are first thrown upward and outward toward the ceiling which diffuses them and redirects them downward thus:



Holophane Filterlite
Semi-indirect Lighting Specific

Indirect Lighting:

Indirect lighting units send all the light rays to the ceiling for diffusion and redirection toward the work thus:



Holophane "Realite"
Indirect Lighting Specific

There is a proper place and application for each of these three forms of equipment. Holophane makes all three types as set forth in the following pages. Holophane Engineers will be glad to advise you which form is best for your use.

Holophane Reflector-Refractors

The Holophane Reflector-Refractor is the ideal direct lighting unit. Its efficient light controlling qualities assure the greatest possible amount of light delivered to the working areas, where it is needed. The sparkling prismatic crystal glass together with the satin nickel fixture design presents a harmonious combination for present day general lighting purposes. It is especially suitable for stores, public building spaces, school laboratories and general service areas or for offices and classrooms where ceiling conditions do not permit the use of semi-indirect luminaires.

The Reflector-Refractor is a totally enclosing two piece prismatic globe, the upper member of which reflects the light downward. The lower refracting member distributes it in an intensive or extensive light pattern as may be desired. A small amount of light is transmitted thru the upper member to relieve ceiling contrast and the interior of the glass-ware is velvet finished to assist in diffusing the light. Easy relamping is accomplished thru a removable bottom cup which rests in the lower member. The figure below describes the light controlling features and construction details.

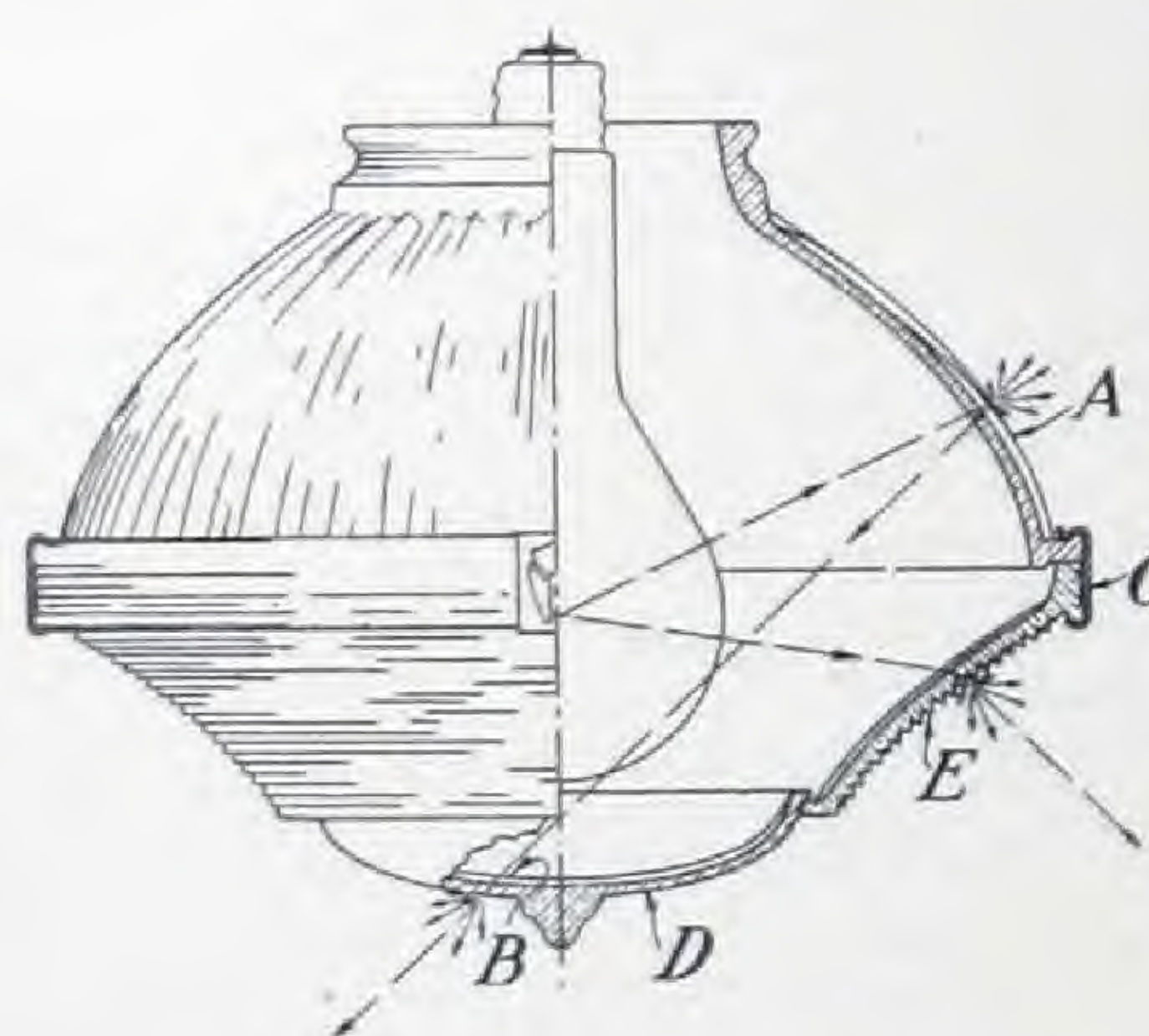
Fixtures are of heavy 22 gauge brass of smooth contour design. Ceiling type fixtures are provided with crossbar and barrel nuts for mounting. Suspension fixtures are of rigid stem, ball and swivel construction with drop canopy and terminate in a $\frac{3}{8}$ " female hickey for direct attachment to outlet box stud.

All fixtures are furnished with an easy to wire porcelain socket. No. 16 AF wire is furnished but fixtures are NOT wired.

Standard finish: Satin nickel. Dull brass, acid bronze and Duco finishes can be furnished at no extra cost. Other finishes quoted on request.



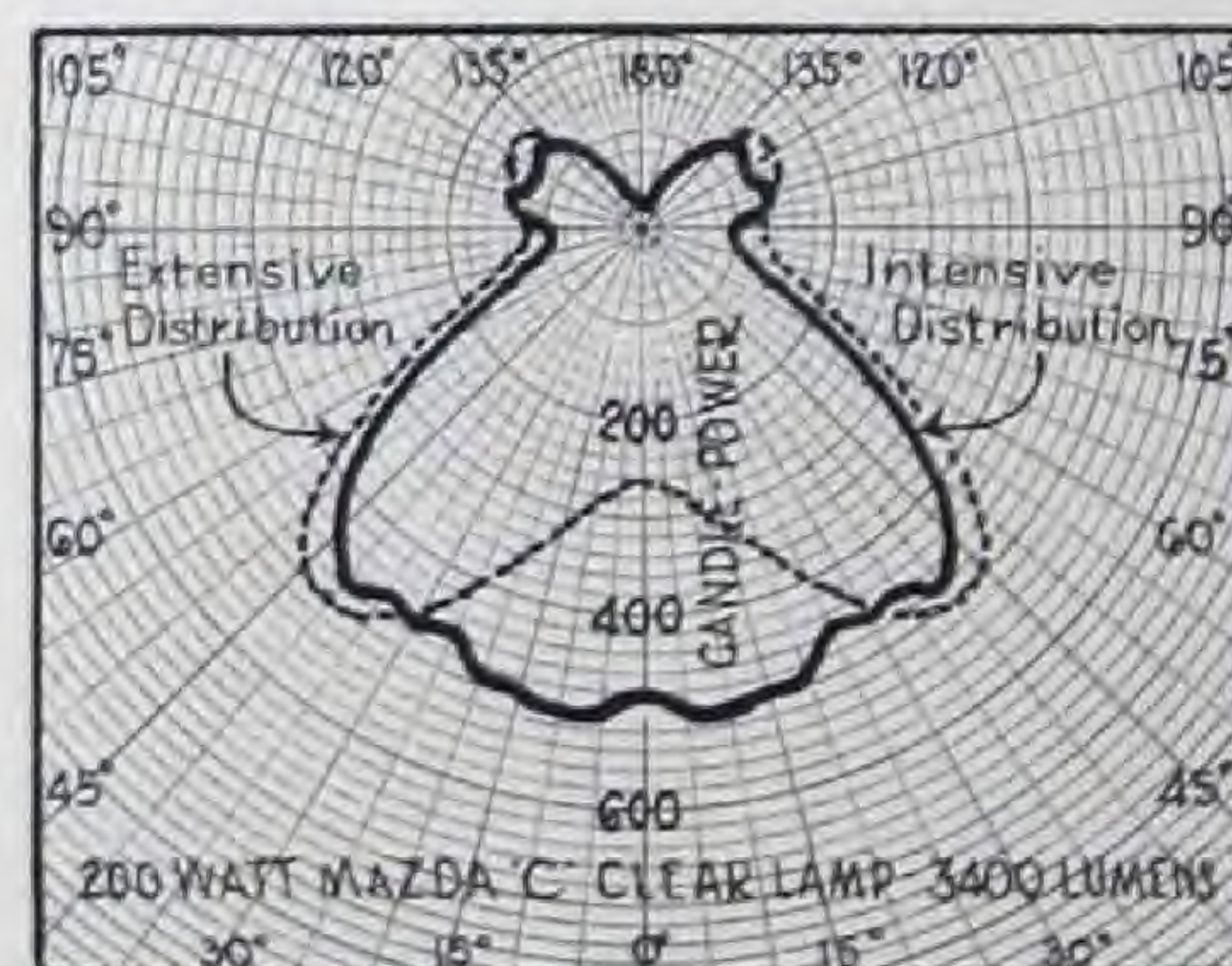
Suspension Type
(S-Type)



- A. Totally reflecting prisms turn light down and allow some to be transmitted.
- B. Refracting prisms designed to produce Extensive or Intensive distribution.
- A.-B.-E. Velvet finish assists diffusion.
- C. Spring clips hold glass parts together.
- D. Removable glass cup furnished on all sizes except Nos. 2170 and 2180 which have a solid bottom.
- E. Refracting prisms designed to redirect the light.



Ceiling Type
(C-Type)



Characteristic Extensive
or Intensive Distribution

REFLECTOR—REFRACTOR CHARACTERISTICS

1. Direct distribution (70% of output downward and 30% upward).
2. Minimum flux at glare angles.
3. Maximum efficiency.
4. Minimum dust depreciation.
5. No permanent deterioration.
6. Extensive or Intensive distribution.
7. Attractive appearance.
8. Good diffusion.
9. Ease in relamping.

HOLOPHANE REFLECTOR-REFRACTORS—SPECIFIC FOR DIRECT LIGHTING

SCHEDULE "R" DISCOUNTS

WE LIST AND RECOMMEND the use of Holophane glassware with Holophane hangers as complete units because that is the only method by which we can guarantee correct illumination. If Holophane glassware is used with fixture parts furnished by outside manufacturers, we cannot be responsible for the result.

Always use Holophane glass with Holophane fixtures to obtain genuine results.

Complete Unit	Fixture Only	Glass Only	Distribution	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp	Holders
							Diameter	Depth		
C-2110-R	0591†	.....	Extensive	\$ 5.80	12	61	7½"	8½"	75-100	2¼-0
		.....	.....	2.80	12	15	5¼"	2¾"	75-100	2¼-0
		2110†	Extensive	3.00	12	46	7½"	6⅞"	75-100	2¼-0
C-2120-R	0592†	.....	Extensive	7.50	8	66	9¾"	11⅞"	100†-150	3¼-0
		.....	.....	3.00	8	14	5¼"	3⅞"	100†-150	3¼-0
		2120†	Extensive	4.50	8	52	9¾"	7¾"	100†-150	3¼-0
C-2130-R	0593†	.....	Extensive	14.00	4	54	12"	12¾"	200	4
		.....	.....	3.50	4	10	5¼"	4"	200	4
		2130†	Extensive	10.50	4	44	12"	9½"	200	4
C-2133-R	0593†	.....	Intensive	14.00	4	54	12"	12⅝"	200	4
		.....	.....	3.50	4	10	5¼"	4"	200	4
		2133†	Intensive	10.50	4	44	12"	9⅝"	200	4
C-2140-R	0594†	.....	Extensive	20.00	3	58	14"	14¼"	300-500	4
		.....	.....	5.00	3	10	5¼"	4"	300-500	4
		2140†	Extensive	15.00	3	48	14"	11"	300-500	4
C-2140-6"-R	0595†	.....	Extensive	20.00	3	59	14"	14⅜"	300-500	6
		.....	.....	5.00	3	11	6⅜"	4¾"	300-500	6
		2140-6"†	Extensive	15.00	3	48	14"	10½"	300-500	6
C-2143-R	0594†	.....	Intensive	20.00	3	58	14"	14⅞"	300-500	4
		.....	.....	5.00	3	10	5¼"	4"	300-500	4
		2143†	Intensive	15.00	3	48	14"	10⅞"	300-500	4
C-2143-6"-R	0595†	.....	Intensive	20.00	3	59	14"	13⅝"	300-500	6
		.....	.....	5.00	3	11	6⅜"	4¾"	300-500	6
		2143-6"†	Intensive	15.00	3	48	14"	10⅝"	300-500	6
S-2110-R†	0571†	.....	Extensive	7.80	12	68	7½"	29¼"	75-100	2¼-0
		.....	.....	4.80	12	22	4⅜"	23⅝"	75-100	2¼-0
		2110†	Extensive	3.00	12	46	7½"	6⅞"	75-100	2¼-0
S-2120-R	0572†	.....	Extensive	9.50	8	71	9¾"	31½"	100†-150	3¼-0
		.....	.....	5.00	8	19	4⅜"	24¼"	100†-150	3¼-0
		2120†	Extensive	4.50	8	52	9¾"	7¾"	100†-150	3¼-0
S-2130-R	0573†	.....	Extensive	16.00	4	60	12"	33⅞"	200	4
		.....	.....	5.50	4	12	4⅜"	24¼"	200	4
		2130†	Extensive	10.50	4	48	12"	9½"	200	4
S-2133-R	0573†	.....	Intensive	16.00	4	60	12"	33"	200	4
		.....	.....	5.50	4	12	4⅜"	24¼"	200	4
		2133†	Intensive	10.50	4	48	12"	9⅝"	200	4
S-2140-R	0574†	.....	Extensive	22.00	3	60	14"	34⅝"	300-500	4
		.....	.....	7.00	3	12	4⅜"	24¼"	300-500	4
		2140†	Extensive	15.00	3	48	14"	11"	300-500	4
S-2140-6"-R	0575†	.....	Extensive	22.00	3	62	14"	34⅞"	300-500	6
		.....	.....	7.00	3	14	6⅜"	24¾"	300-500	6
		2140-6"†	Extensive	15.00	3	48	14"	10½"	300-500	6
S-2143-R	0574†	.....	Intensive	22.00	3	60	14"	34½"	300-500	4
		.....	.....	7.00	3	12	4⅜"	24¼"	300-500	4
		2143†	Intensive	15.00	3	48	14"	10⅞"	300-500	4
S-2143-6"-R	0575†	.....	Intensive	22.00	3	62	14"	34"	300-500	6
		.....	.....	7.00	3	14	6⅜"	24¼"	300-500	6
		2143-6"†	Intensive	15.00	3	48	14"	10⅝"	300-500	6
C-2170-R*	0593†	.....	Extensive	8.00	8	75	9⅞"	10⅞"	100†-150	4
		.....	.....	3.50	8	20	5¼"	4"	100†-150	4
		2170*†	Extensive	4.50	8	55	9⅞"	7⅝"	100†-150	4
C-2180-R*	0598†	.....	Extensive	14.50	4	54	12"	12¾"	200	5
		.....	.....	4.00	4	10	5⅜"	4"	200	5
		2180*†	Extensive	10.50	4	44	12"	9½"	200	5
S-2170-R*	0573†	.....	Extensive	10.00	8	73	9⅞"	31¼"	100†-150	4
		.....	.....	5.50	8	18	5⅜"	24¼"	100†-150	4
		2170*†	Extensive	4.50	8	55	9⅞"	7⅝"	100†-150	4
S-2180-R*	0578†	.....	Extensive	16.50	4	58	12"	33⅞"	200	5
		.....	.....	6.00	4	14	5⅜"	24¼"	200	5
		2180*†	Extensive	10.50	4	44	12"	9½"	200	5

Prices on special fixture finishes furnished on request. *One piece unit.
No. 2170 available with Screw Thread Fitter, see page 30. †Use ⅞" socket extension with 100 watt lamp.
†These units are packed in individual cartons. Extra stem length \$.60 per foot list extra.

The Holophane Filterlite

We list and recommend the use of Holophane glassware with Holophane hangers as complete units because that is the only method by which we can guarantee correct illumination. If Holophane glassware is used with fixture parts furnished by outside manufacturers, we cannot be responsible for the result.

Always use Holophane glass with Holophane fixtures to obtain genuine results.

Offices, classrooms and other locations where constant eye work is performed require a refinement of illumination not generally necessary in the lighting of less exacting business or industrial areas. Semi-indirect illumination provides the necessary intensity and diffusion for such work.

The Holophane Filterlite is designed to give a flood of soft glareless illumination by directing the major portion of the light to the ceiling where it is diffused and redirected to the working area (desk tops, etc.) A minor portion of the light is diffused directly downward to build up illumination under the luminaire. This semi-indirect lighting unit is admirably suited for office or similar work because of the following outstanding characteristics:

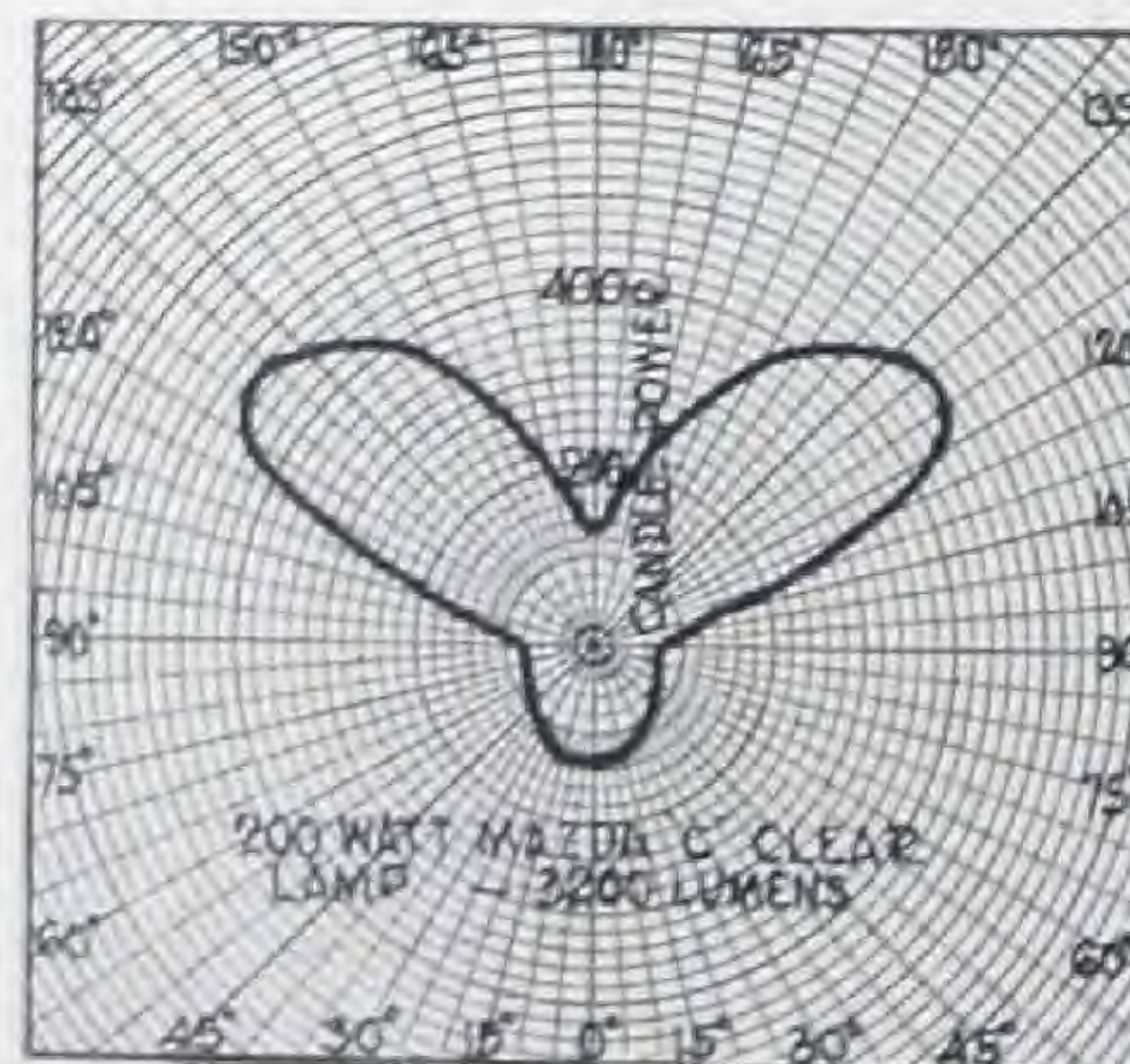


Ceiling Type
CF-100-R CF-200-R CF-300-R



Suspension Type
F-100-R F-200-R F-300-R

1. Semi-indirect distribution (80% of output upward—20% downward).
2. High efficiency.
3. Low Brilliancy.
4. Minimum dust depreciation.
5. No permanent deterioration.
6. Wide spread ceiling light.
7. No shadows or streaks.
8. No sharp cut-off on ceiling
9. Excellent appearance.



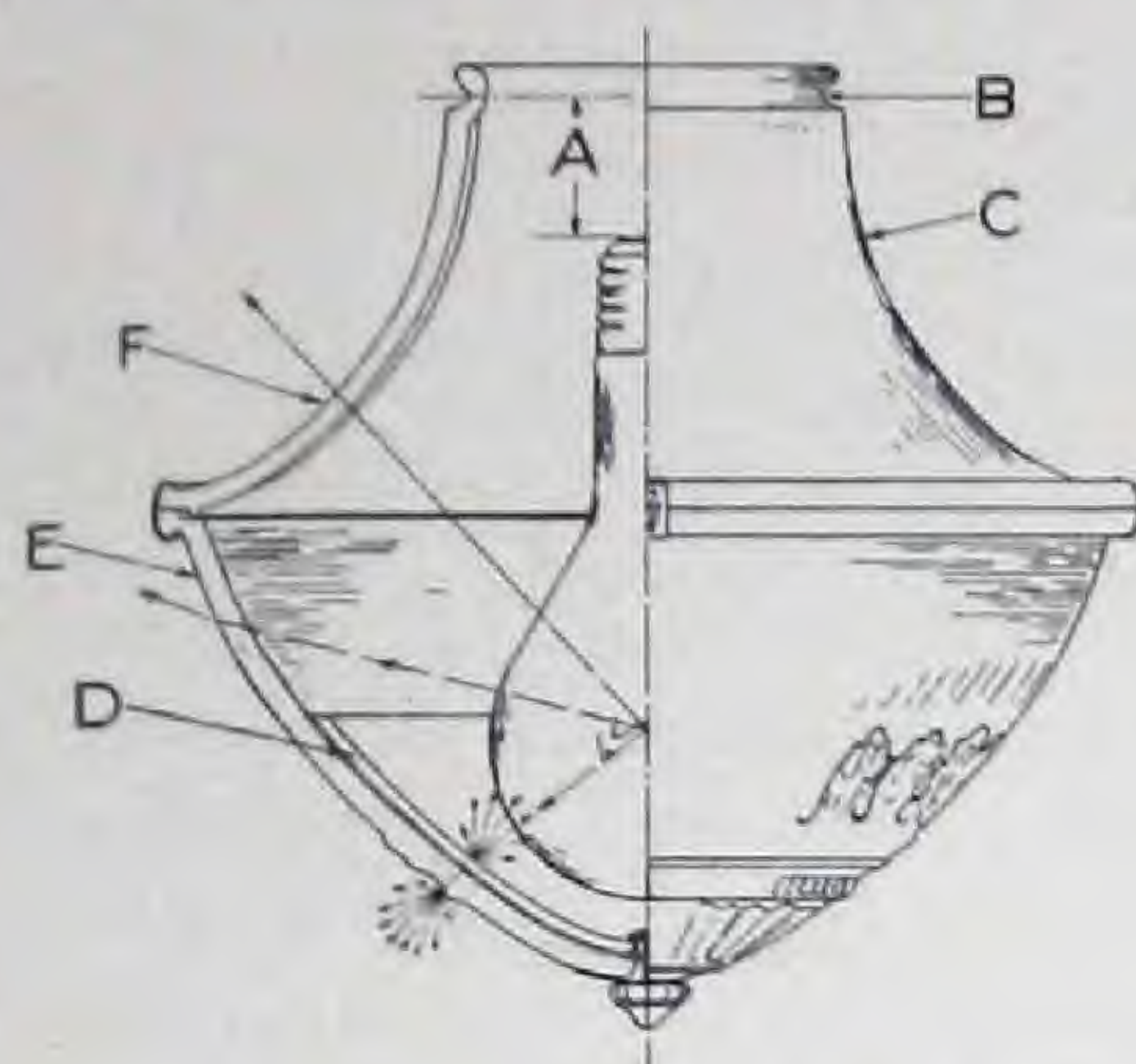
Characteristic Curve



F-500-16-R

The Filterlite is a totally enclosing unit of two-piece construction. It is smooth on the outside with refracting prisms and a diffusing liner in the lower bowl and diffusing prisms on the inside of the upper bell. These direct and control the light from the lamp as shown and described hereafter.

HOLOPHANE FILTERLITE—SPECIFIC FOR SEMI-INDIRECT LIGHTING



- A. Correct distance from center line of set screws to contact point of lamp—150 watt—2½"; 200 watt—3"; 300 watt—2".
- B. Close fixture joints resist dust collection on interior.
- C. Steep slope resists dust accumulation outside.
- D. Reflecting liner directs incident light upwards and provides enough transmission to illuminate lower bowl.
- E. Refracting prisms bend light outward to give a wide spread on the ceiling.
- F. Diffusing prisms spread the light uniformly on the ceiling and prevent both bright lines and fixture shadows.

Fixtures for glass Nos. 7322 and 7344 are of heavy 22 gauge brass of smooth contour design. Ceiling type fixtures are equipped with cross bar and barrel nuts for mounting. Suspension fixtures are of rigid stem, ball and swivel construction with drop canopy and terminate in a ¾" female hickey for direct attachment to outlet box stud. All fixtures have easy-to-wire porcelain sockets. No. 16 AF wire is furnished but fixtures are NOT wired.

Finish of above fixture: Satin nickel. Dull brass, acid bronze and Duco furnished at no extra cost. Other finishes quoted on request.

Fixture for No. F-500-16" uses an internal four arm support attached to heavy spun hinged bands in which the glass rests. The glass and supporting fixture parts are attached to the hanger as a unit by means of a Diple connector. The fixture thus provides a means for quick relamping, easy maintenance and hinged support for the glass. Fixture for No. F-500-18" is made of cast brass with a steel chain hanger. As listed it is furnished in Satin nickel.

INSTALLATION: Use Filterlites spaced on not over 15 foot centers and mounted so that distance from ceiling to bottom of glassware will not exceed 25% of total ceiling height.

SCHEDULE "R" DISCOUNTS

	Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Holder	Mazda Lamp
							Diam.	Depth		
Ceiling Type	CF-100-R	0500†	7322‡	\$12.50 3.50 9.00	5 5 5	85 15 70	12" 5¼" 12"	14⅛" 4⅜" 10½"	4" Special 4" " 4" "	100†-150 100†-150
	CF-200-R	0501†	7344‡	18.00 5.00 13.00	4 4 4	95 15 80	14" 6⅛" 14"	17½" 4⅝" 13⅝"	5½" " 5½" " 5½" "	200 200
	CF-300-R	0502†	7344‡	19.00 6.00 13.00	3 3 3	72 12 60	14" 6⅛" 14"	17½" 4⅝" 13⅝"	5½" " 5½" " 5½" "	300 300
Suspension Type	F-100-R	0480†	7322‡	14.00 5.00 9.00	5 5 5	90 20 70	12" 4⅜" 12"	32½" 22¾" 10½"	4" " 4" " 4" "	100†-150 100†-150
	F-200-R	0481†	7344‡	19.00 6.00 13.00	4 4 4	100 20 80	14" 5⅞" 14"	35¾" 22¾" 13⅝"	5½" " 5½" " 5½" "	200 200
	F-300-R	0482†	7344‡	20.00 7.00 13.00	3 3 3	75 15 60	14" 5⅞" 14"	35¾" 22¾" 13⅝"	5½" " 5½" " 5½" "	300 300
	F-500-16"-R	0386†	7366‡	42.00 22.00 20.00	2 2 2	110 20 90	16½" 16½" 16"	36" 28" 16¼"	Special Band " " " "	500 500
	F-500-18"	0383†	7388	60.00 30.00 30.00	1 1 1	119 45 74	21¾" 21¾" 18"	75¼" 63" 23"	" " " " " "	500 500

† Use 7/8" socket extension with 100 watt lamp. ‡ These units are packed in individual cartons.
 On special orders, polished metal liners will be supplied instead of the standard white glass liners at an additional list of \$0.75 for the 100-150 watt size, \$1.00 on the 200-300 watt size and \$1.25 on the 500 watt size.
 Pull chain canopy switch can be furnished at \$1.50 list extra.
 Extra stem length \$0.60 per foot list extra on 100 to 300 watt sizes and \$1.50 per foot list extra on 500 watt size.

HOLOPHANE "REALITE"—SPECIFIC FOR INDIRECT LIGHTING

Holophane "Realite"

The Holophane "Realite" (R-500 and R-1000) meets present day requirements for totally indirect lighting due to its modernistic design, efficient operating qualities and flexibility of fixture treatment. Its ability to direct the light outward and upward at wide angles to the ceiling results in indirect illumination of exceptional quality.

Controlled light distribution is produced entirely by a two-piece prismatic refractor, smooth on the outside, held against gaskets between a cast bottom flange and upper socket cover and concealed by the aluminum mask. The unit is easily maintained as the lamp is entirely enclosed in the combined glass refractor and aluminum cup reflector preventing direct contact with dirt. Cleaning is accomplished by simply wiping off the smooth outside of the glass refractor.

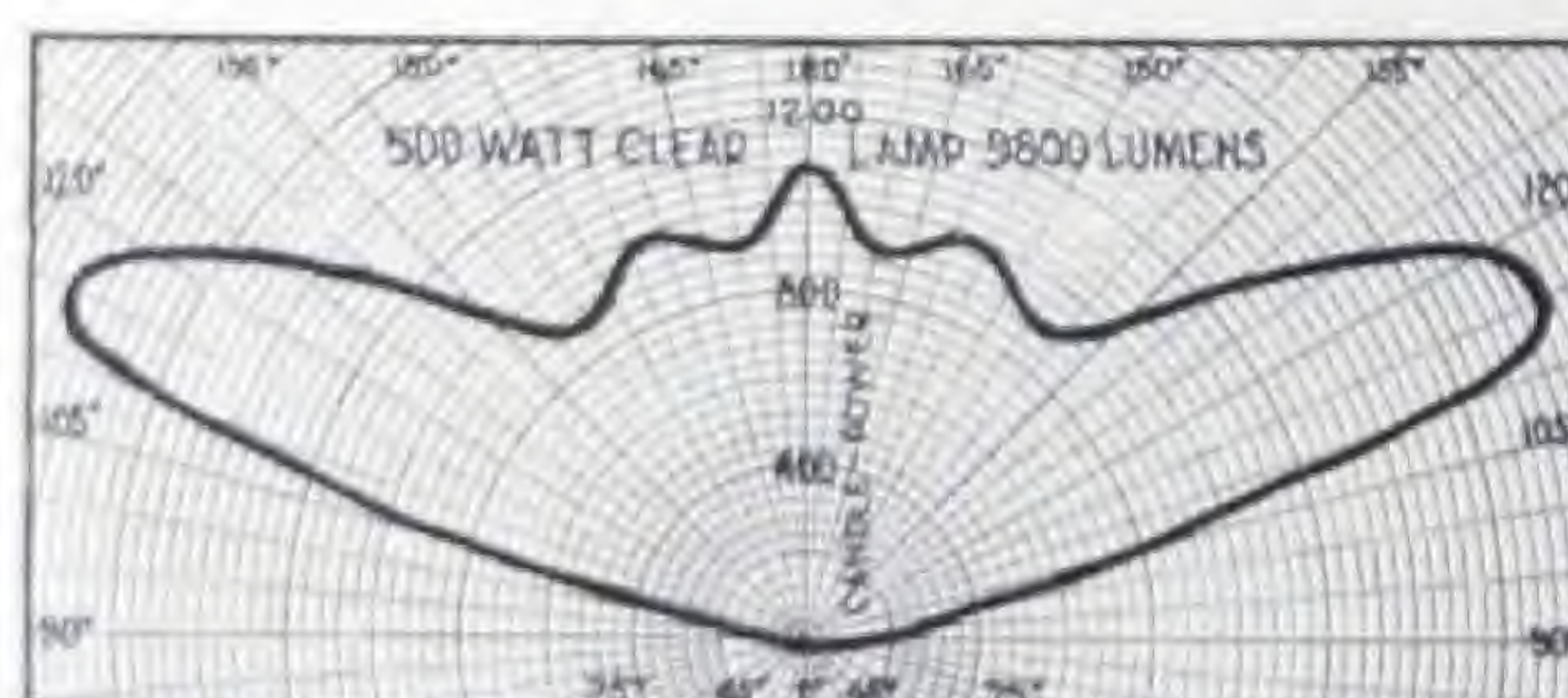
Standard fixture finishes are either dull aluminum or spray bronze. Fixture is supplied with drop canopy, swivel joint and stem suspension with wire included but NOT attached to terminals. Easy relamping is accomplished thru the hinged lower step of the mask.

The optical assembly lends itself to fixture treatment by architects who desire distinctive (architectural) designs for special projects. The Holophane Engineering Department will gladly cooperate with such designers to insure preservation of the illuminating virtue of the optical assembly.

Modified treatment in modernistic form is expressed in the RN-300 which is the optical assembly incorporated with a smooth contour fixture and polished metal bottom pan held by means of spring clips to the cast bottom flange. Finish of fixture and pan polished aluminum.



"Realite"



Characteristic "Realite" Curve



Optical Assembly



RN-300

SCHEDULE "R" DISCOUNTS

Complete Unit	Optical Assembly	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
					Diameter	Depth	
RN-300	7180-A	\$17.00	4	94	13 3/4"	30"	200*-300
		14.00	4	80	11 1/4"	12 5/16"	200*-300
R-500	7180-A	29.00	4	92	24"	30"	300-500
		14.00	4	80	11 1/4"	12 5/16"	300-500
R-1000	7190-A	50.00	4	200	34"	42"	1000
		20.00	4	110	14 1/4"	16 3/4"	1000

* Use mogul to medium base adapter.

HOLOPHANE (ASYMMETRIC) SPECIFICS FOR AISLE LIGHTING

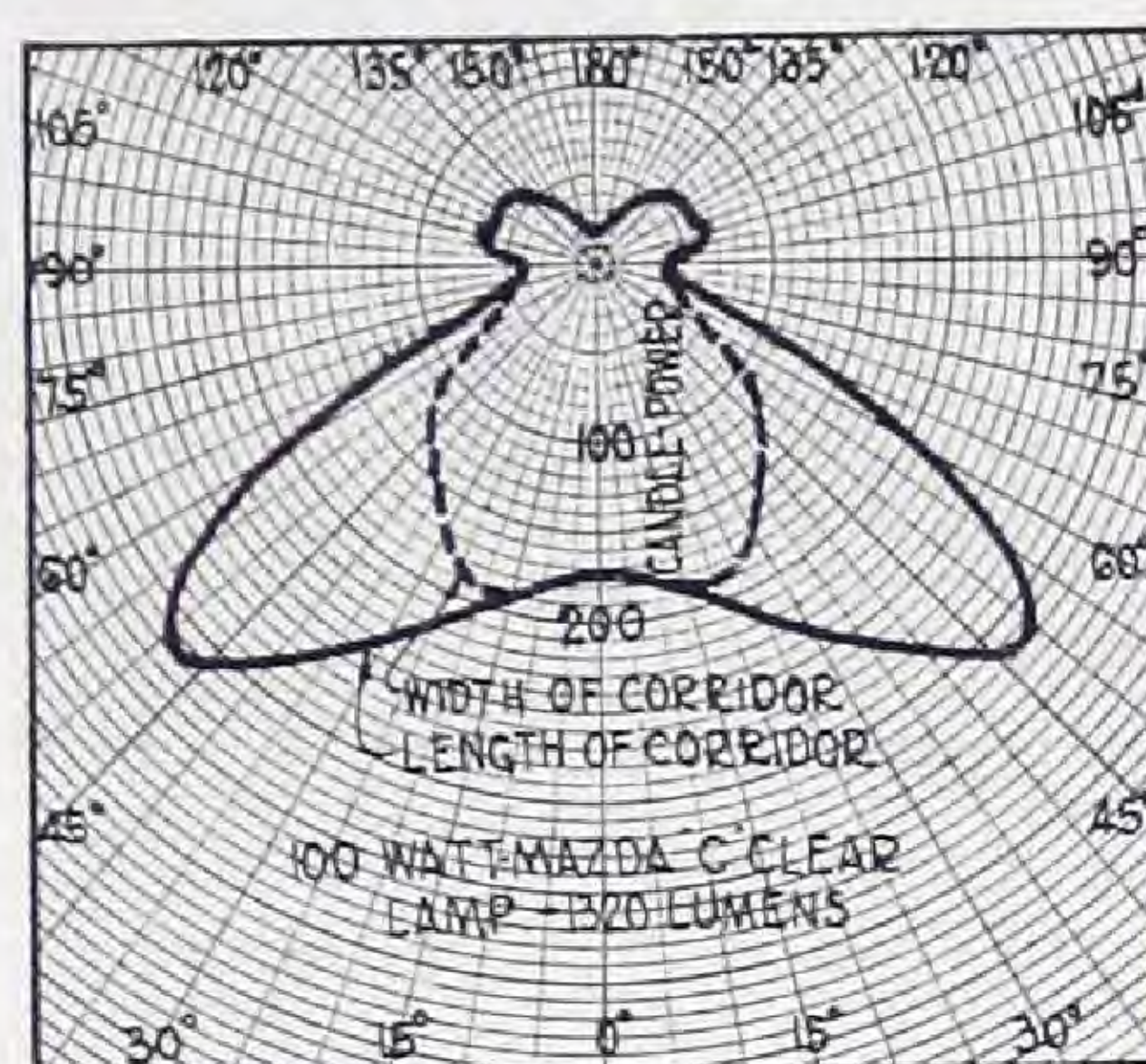
Asymmetric Lighting

Irregular areas and locations requiring a high component of vertical lighting need what might be termed "tailor-made lighting." Holophane equipment meets these unusual lighting requirements readily due to its ability to control light and shape the light to fit the area to be lighted. For this reason the effective illumination from these units is far greater than can be obtained from any general lighting unit whose light distribution does not conform to the area.

No. C-2172 is for corridor lighting or for long narrow areas of similar proportions (see No. 2472—page 31). The light is restricted in the width of the corridor and that which is generally wasted on side walls in ordinary lighting systems is redirected and utilized along the length of the corridor. Fixture finish—satin nickel.



No. C-2172-R
(For Corridors)



Characteristic Curves
No. C-2172-R

Use with 100 and 150 watt lamps on spacings not exceeding two and a half times the mounting height. For corridors and industrial aisles.

SCHEDULE "R" DISCOUNTS

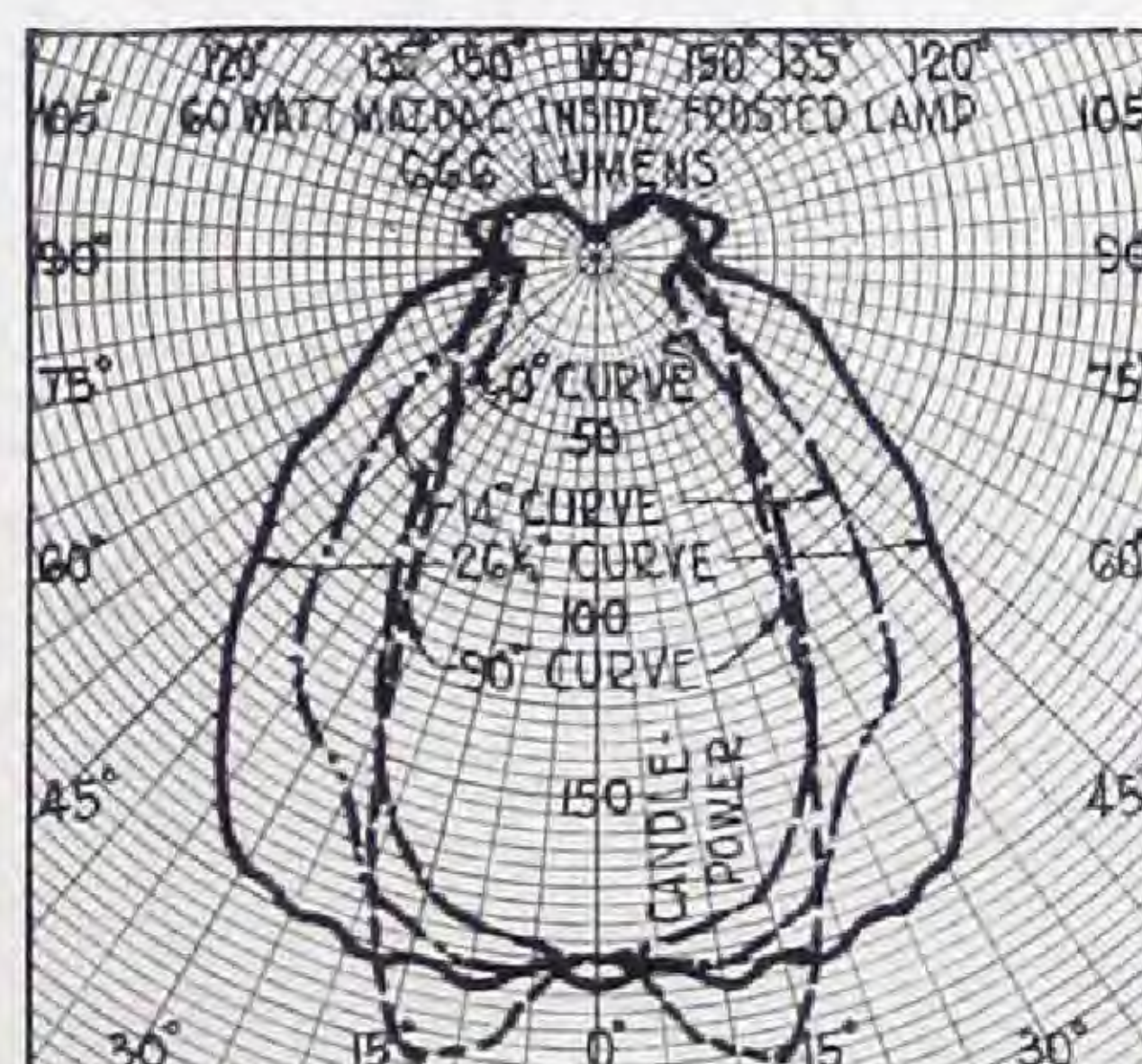
Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
C-2172-R	0596†	....	\$8.00	8	75	9 7/8"	10 3/4"	100†-150
		....	3.50	8	20	5 1/4"	4"	
		2172‡	4.50	8	55	9 7/8"	7 1/2"	100†-150

No. 02176 is for lighting library bookstacks, stock bins (see No. 2476—page 31) etc., and provides uniform illumination on books or shelves from top to bottom and from unit to unit. Designed for 50-60 watt lamp but can be furnished for use with 40 watt lamp on special order. Dull nickel finish fixture for mounting directly on ears of 3 1/4"-4" outlet box.

Nos. 2172 and 2176 glass are provided with an orienting lug to engage a notch in the fitter to assure correct installation for proper light utilization.



No. 02176
(For Stock Bin Aisles)



No. 02176
Characteristic Curves

Use with 60 watt lamps on spacings not exceeding 7 feet. Mount 7 feet from the floor. For library book stacks, stock bins and similar places.

02176	0366	....	\$5.50	8	73	9 7/8"	6 3/4"	50-60
		....	1.25	8	18	4 3/8"	1"	
		2176‡	4.25	8	55	9 7/8"	6 1/2"	50-60

† Use 7/8" socket extension with 100 watt lamp.

‡ These units are packed in individual cartons.

Holophane Industrial Specifics

The superior efficiency of Holophane for industrial use is generally acknowledged. This efficiency has been secured by designing special equipment to fulfill the illumination and mechanical requirements peculiar to the different processes in the various industries.

By designing the reflector equipment so that the available light is confined to the actual work, the utilized light can be greatly increased and glare effectively eliminated. For instance, a lighting unit designed for use in a dynamite loading room could hardly be expected to give efficient lighting for a silk loom. Specific lighting equipment designed for specific application to industry is the logical way to secure economical satisfactory illumination.

Holophane Industrial Specifics include the following:

1. "Hi-Bay": For areas in which the lighting equipment is mounted twenty-five feet or more above the floor level.

2. "Vertical Surface": For use when light on vertical surfaces is of the first consideration.

3. "Lo-Bay" and "Localized General": For areas in which ceiling heights are usually not more than fifteen feet and the requirements are for a general system of uniform illumination, and for areas in which the actual work done is confined to a limited space such as on inspection tables, for looms, or for rows of machines separated by aisles.

4. "Standard Industrial Replacement Unit": For use where the enameled steel type reflector has depreciated beyond its useful life or where a more efficient type of industrial reflector is desired.

5. "Wide-spread": For uniform lighting over areas having a diameter six times the mounting height. Used chiefly for warehouses and outdoors in connection with watchman's service and for safety and convenience in moving about. Some uses are:

Factory Gates	Factory Entrances	Warehouses	Gasoline Filling Stations
Parking Spaces	Roadways	Private Garages	Parking Garages (indoors)
Breweries	Shipping Platforms	Private Grounds	Storage Space

6. "Industrial Yards": For uniform illumination of storage and similar yards where lights are placed on centers eight to twelve times the mounting height which is usually twenty to thirty feet.

7. "Outdoor Sub-station": Especially designed to give: (a) high vertical component of light; (b) ease and safety in relamping; (c) flexible light distribution; (d) absence of glare, sharp shadows and dark pockets—for the outdoor sub-station.

8. "Vapor Proof": For chemical plants, storage battery rooms, dye houses, wet rooms, chemical laboratories, distilleries, rectification plants, lacquer finishing rooms, lacquer, paint and varnish plants.

9. "Legger": For lighting leggers and footers in the textile industry and for other similar machinery where concentration of light is needed along an extended series of fine working points.

10. "Holophane Specifics for Special Industrial use."

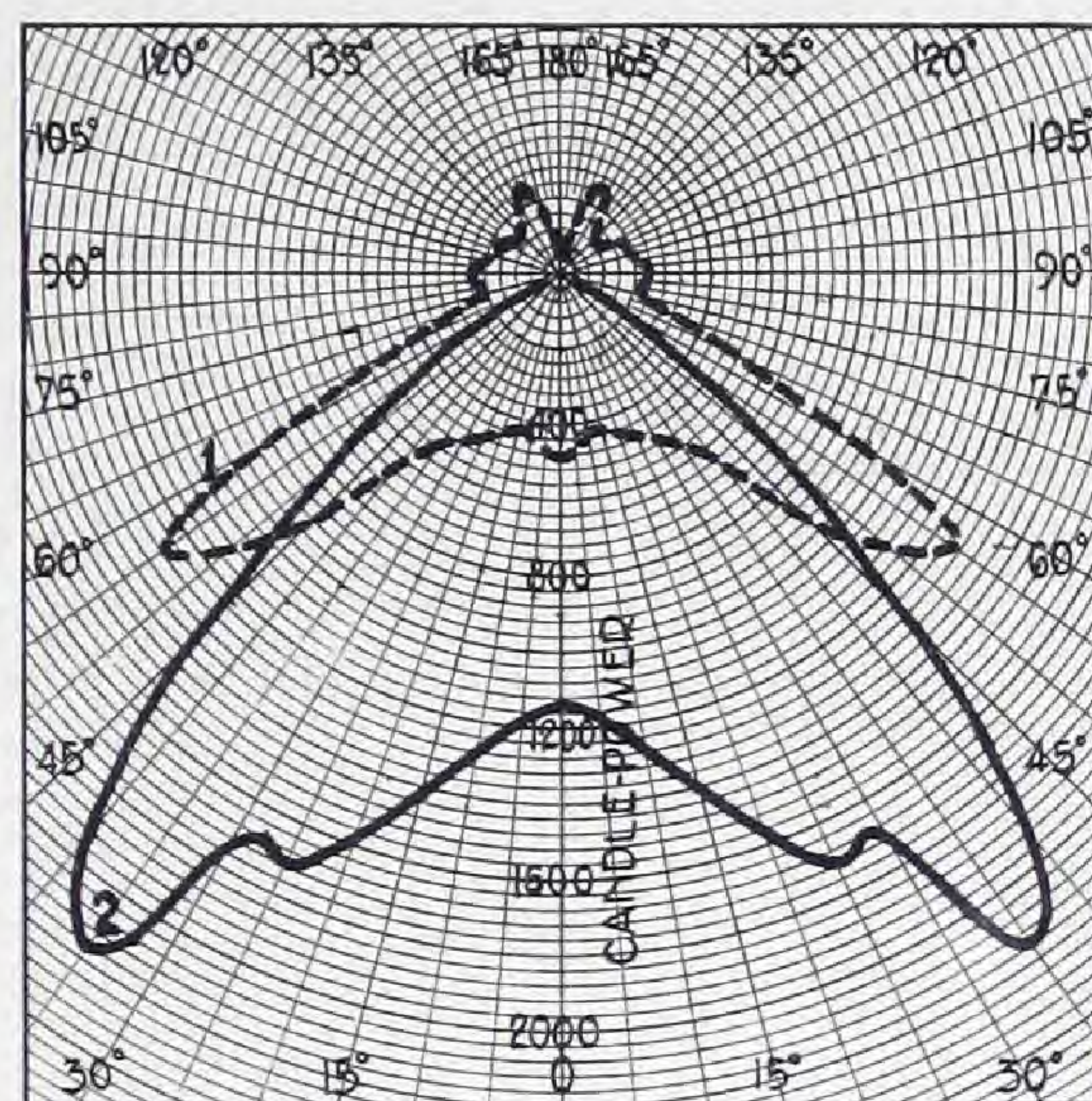
The use of specifics such as listed above is an advance in the art of illumination which puts into the hands of the engineer the best available tools for economical industrial lighting installations.

HOLOPHANE SPECIFICS FOR LIGHTING VERTICAL* SURFACES

Holophane Specifics Nos. 622, 652 and 692-AL are heavy duty Industrial units, designed to give maximum illumination on vertical* surfaces (approximately twice the vertical* illumination provided by competitive equipment). The reflectors are heavy pressed prismatic glass and are quickly removable without tools for cleaning. In extremely dirty locations Nos. 622 and 652 are obtainable with dust-tight aluminum covers spun on permanently. Dust-tight aluminum cover and drip-shield are standard with 692-AL. The fixture stem is $\frac{3}{4}$ " iron conduit terminating in a loop with wire port. The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. The tripod is locked in position with a special retaining ring making it impossible for the reflector to fall. The sockets are heavy duty porcelain mill type with lamp grip and nickel plated socket shells. Standard fixture finish is "Udylite" (cadmium plated). Units are NOT wired.



No. 622-652



Characteristic Curves

1. No. 652 with 300 watt lamp
2. No. 692-AL with 500 watt lamp



No. 692-AL

Use Nos. 622 and 652 on low ceilings where outlets are spaced from $1\frac{1}{2}$ to $2\frac{1}{2}$ times the mounting height on installation where vertical illumination is required. No. 692-AL has been especially designed for the illumination of large presses.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Socket	Mazda Lamp
						Diameter	Depth		
622†	.....	.....	\$9.55	5	65	12 $\frac{1}{2}$ "	20 $\frac{1}{4}$ "	Medium	100-150-200
	0671	.....	3.50	5	25	12 $\frac{1}{2}$ "	20 $\frac{1}{4}$ "	Medium	
	.....	6522	6.05	5	69	11 $\frac{3}{8}$ "	6 $\frac{7}{8}$ "	Medium	100-150-200
652†	.....	.....	11.50	5	90	13 $\frac{1}{4}$ "	20 $\frac{1}{8}$ "	Mogul	200†-300-500
	0672-E	.....	4.25	5	30	13 $\frac{1}{4}$ "	20 $\frac{1}{8}$ "	Mogul	
	.....	6552	7.25	5	71	12 $\frac{3}{8}$ "	7 $\frac{3}{8}$ "	Mogul	200†-300-500
622-AL†§	.....	.....	13.80	5	70	12 $\frac{1}{2}$ "	20 $\frac{1}{4}$ "	Medium	100-150-200
	0671	.....	3.50	5	25	12 $\frac{1}{2}$ "	20 $\frac{1}{4}$ "	Medium	
	.....	6522-AL§	10.30	5	73	11 $\frac{3}{8}$ "	6 $\frac{7}{8}$ "	Medium	100-150-200
652-AL†§	.....	.....	15.75	5	95	13 $\frac{1}{4}$ "	20 $\frac{1}{8}$ "	Mogul	200†-300-500
	0672-E	.....	4.25	5	30	13 $\frac{1}{4}$ "	20 $\frac{1}{8}$ "	Mogul	
	.....	6552-AL§	11.50	5	75	12 $\frac{3}{8}$ "	7 $\frac{3}{8}$ "	Mogul	200†-300-500
692-AL§	.....	.....	30.25	3	140	19 $\frac{3}{4}$ "	27 $\frac{1}{2}$ "	Mogul	500-1500
	0674-E	.....	10.45	3	35	19 $\frac{3}{4}$ "	27 $\frac{1}{2}$ "	Mogul	
	.....	6692-AL§	19.80	3	105	19 $\frac{1}{8}$ "	10 $\frac{7}{8}$ "	Mogul	500-1500

§ Complete with dust-tight aluminum cover spun permanently over reflector.

* Vertical illumination means illumination on vertical planes and surfaces.

† Socket adapter required to change from mogul to medium base lamp.

‡ These units are packed in individual cartons.

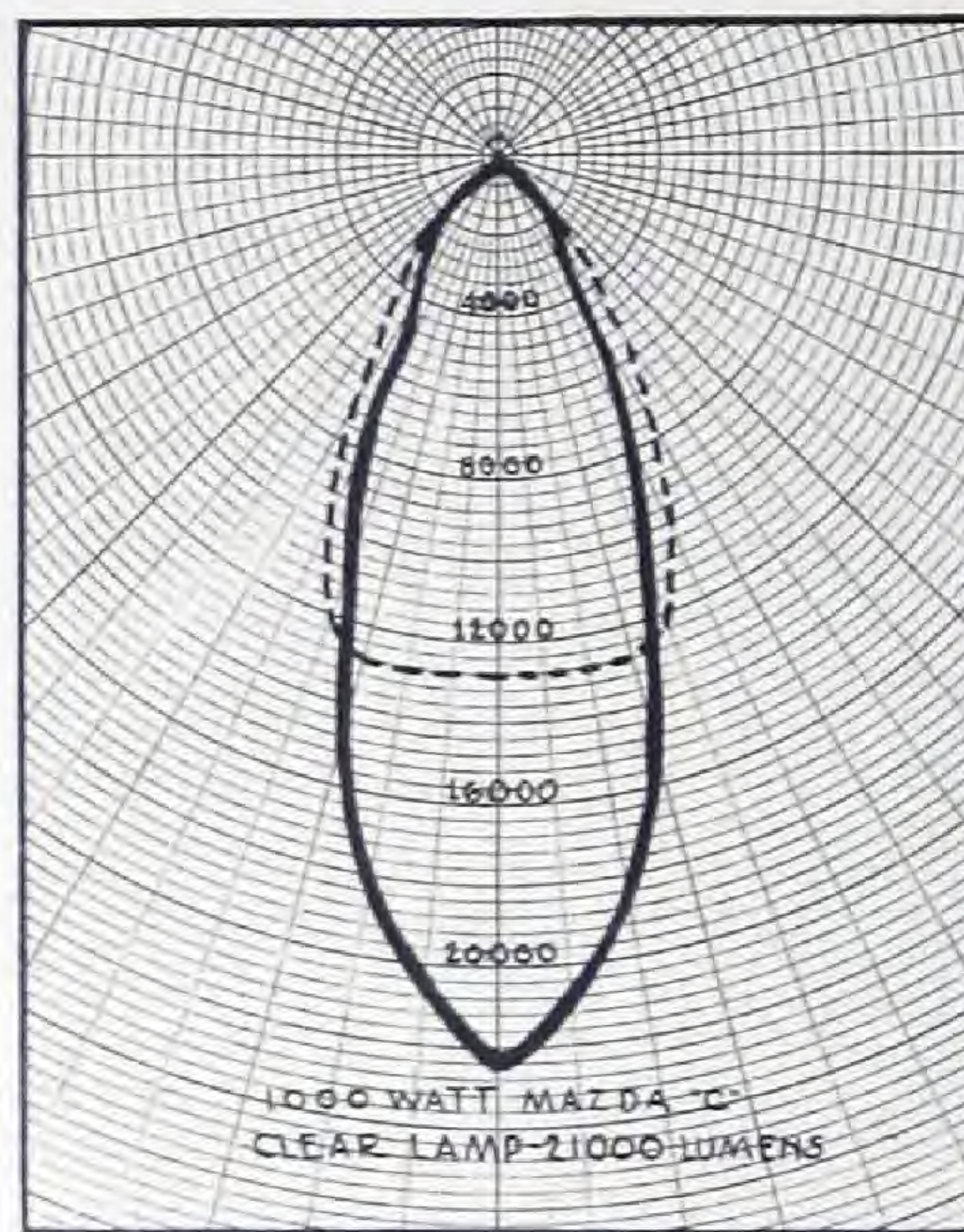
For wire guards see pages 53 and 54.

HOLOPHANE SPECIFICS FOR HIGH BAY LIGHTING

Holophane "Hi-Bay" Specifics Nos. 681-AL, 690-AL and 691-AL are heavy duty Industrial units designed to give maximum downward illumination. These units are specifically intended for locations where the unit must be mounted at considerable heights above the work. (High Bays—Write for Bulletin "Lighting Specific for High Bays.") The reflectors are heavy pressed prismatic glass with dust-tight aluminum cover spun on permanently. The fixture stem is $\frac{3}{4}$ " iron conduit terminating in a loop with wire port. The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. The tripod is locked in position with a special retaining ring making it impossible for the reflector to fall. The sockets are heavy duty porcelain mill type with lamp grip and nickel plated socket shells. Standard fixture finish is "Udylite" (cadmium plated). Units are NOT wired.



No. 681-AL, No. 690-AL,
No. 691-AL



Characteristic Curves
No. 691-AL Curve shown dotted
No. 690-AL Curve shown solid



No. 681-AL-W
No. 691-AL-W

Use 681-AL, 691-AL in all high bay locations—that is where the mounting height above work equals or exceeds the spacing distance.

Use 690-AL for Hi-Bay locations where the spacing is less than the mounting height.

Use 681-AL-W and 691-AL-W for outdoor lighting.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
681-AL†§	0673	.....	\$15.75	5	105	15 $\frac{3}{4}$ "	20 $\frac{5}{8}$ "	300-500
		.....	4.25	5	40	15 $\frac{3}{4}$ "	20 $\frac{5}{8}$ "	
		6681-AL	11.50	5	83	15 $\frac{1}{8}$ "	7 $\frac{5}{8}$ "	300-500
690-AL	0675	.....	30.25	3	150	22"	27 $\frac{1}{2}$ "	750-1000-1500
		.....	10.45	3	40	22"	27 $\frac{1}{2}$ "	
		6690-AL	19.80	3	110	21 $\frac{1}{8}$ "	11 $\frac{3}{8}$ "	750-1000-1500
691-AL‡	0674	.....	30.25	4	155	19 $\frac{3}{4}$ "	27"	500*-750-1000-1500
		.....	10.45	4	40	19 $\frac{3}{4}$ "	27"	
		6691-AL	19.80	4	115	19 $\frac{1}{8}$ "	9 $\frac{3}{4}$ "	500-750-1000-1500
681-AL-W	.....	.....	29.50	5	400	20 $\frac{1}{2}$ "	28 $\frac{1}{8}$ "	300-500
691-AL-W	.....	.....	44.00	5	500	20 $\frac{3}{4}$ "	32"	500-750-1000

For wire guards see prices on pages 53 and 54.

§ Can be furnished, clear glass minus aluminum cover at \$11.50 list.

* If 500 watt lamps are to be used specify for 500 watt. These units will have an overall length of 27" when used with lamps larger than 500 watts. When set for 500 watt the depth is 24 $\frac{1}{2}$ ".

‡ These units are packed in individual cartons.

HOLOPHANE SPECIFICS FOR LOW BAYS & LOCALIZED GENERAL LIGHTING

These "Lo-Bay" specifics are designed for general lighting in factories and industrial plants where the mounting height is not sufficiently great to justify the use of High Bay lighting equipment. They are particularly suitable where the electric outlets are grouped to conform to the machinery arrangement. (Localized General System of lighting.)

These units are usually recommended on ordinary factory ceiling heights up to but not exceeding 20 feet. The Nos. 653 and 654 series are made of heavy pressed prismatic glass with reinforced flange at the bottom edge. They are equipped with metal extension necks in three different types of construction to suit as many different wiring conditions. Units No. 653 and 654 are designed for mounting on any standard 2 1/4" form "O" holder. Fixtures for Nos. 6531 and 6541 are designed for mounting on 4" outlet box. Fixtures for Nos. 6533, 6543 and 6583 are designed for use on 1/2" conduit or reinforced cord with 1/2" cord grips.


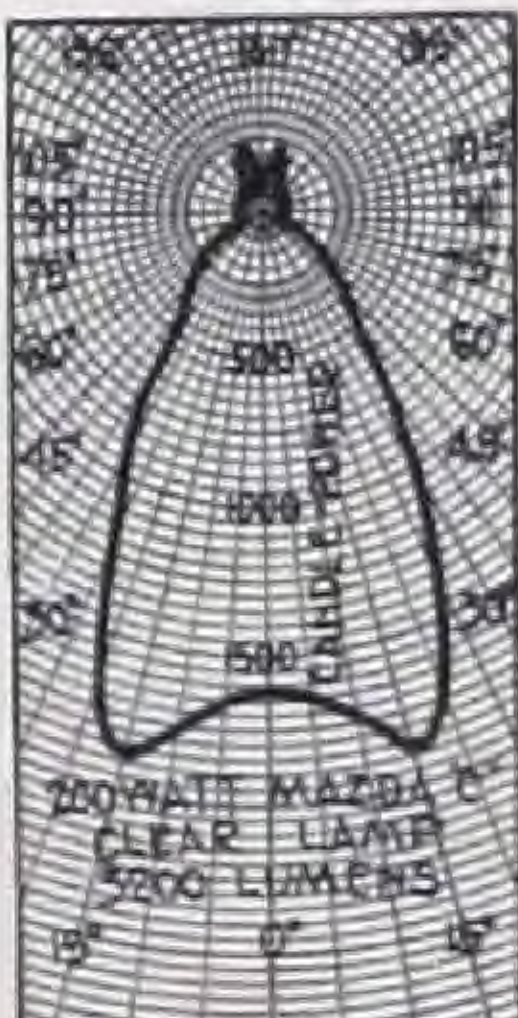
Nos. 6533, 6543 and 6583 have porcelain sockets with threaded neck and lock nut so that the entire socket assembly can easily be taken out of the fixture for wiring. Metal parts, dull nickel finish.

The H-CSE-100, CSE-100-BC, and 6484 series are extensive type industrial light directors designed to accommodate from 100 to 300 watt lamps and arranged for either pipe suspension or outlet box mounting. The exceptional wide spread allows spacing of from 1 1/2 to 2 times the mounting height above the work. The light directors are of heavy pressed prismatic glass terminating at the neck to engage set screw fitters. The fitters are of heavy spun copper having two studs and one beveled end set screw with knurled lock nut assuring rigid support and guarding against backing out due to vibration. The 100 and 200 watt sizes have medium porcelain sockets and the 300 watt size mogul sockets. The fitters are finished dull nickel.

The advantages of these units over standardized metal industrial reflectors are:— higher efficiency, light transmitted to ceiling creating a daylight appearance to lighted room, absence of glare due to 30 degree shielding of lamp filament, low dust and dirt depreciation and NO PERMANENT DEPRECIATION.

The No. 671 reflector is similar in construction to the Hi-Bay and Vertical Surface Units. No. 671 is used in Textile Mills for the illumination of looms and Warpers. Write for engineering folio "Lighting Specifics for Silk Mills." The tripod holder is steel and grips the fixture stem at a point to give correct focal position for the lamp. The tripod is locked in position with a special retaining ring making it impossible for the reflector to fall. The fixture stem is 3/4" iron conduit terminating in a loop with wire port. Standard fixture finish is "Udylite" (cadmium plated). Units are NOT wired.

SCHEDULE "T" DISCOUNTS

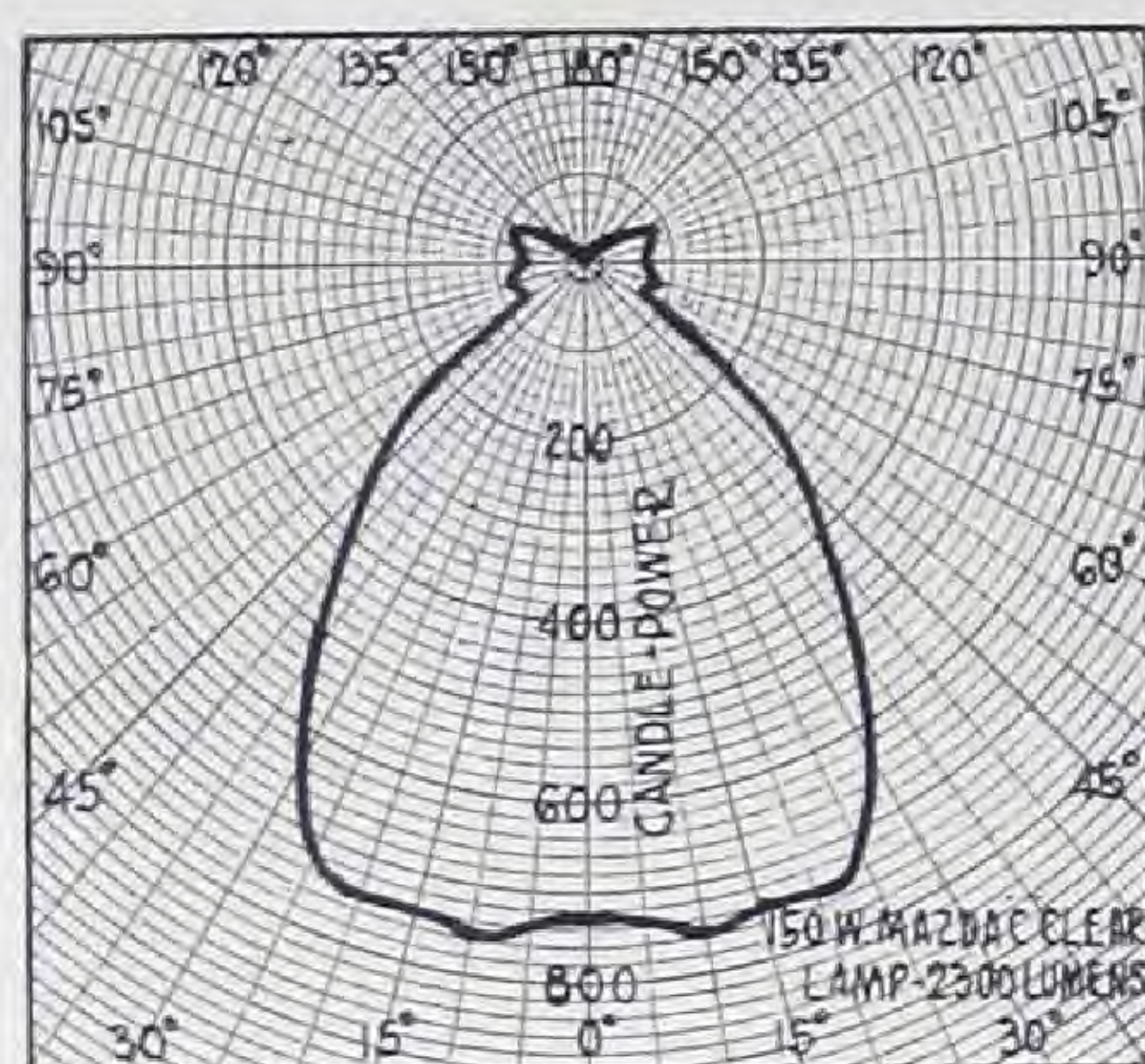
No. 671	Characteristic Curve	Complete Unit	Fix- ture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
								Dia.	Depth	
		671	.....	.....	\$9.55	5	80	13 1/4"	20 5/8"	{ 100 150 200
			0672	.....	3.50	5	33	13 1/4"	20 5/8"	
			6671	6.05	5	75	12 3/8"	6 1/4"		
<p>Wire guards for No. 671 are shown on pages 53 and 54. Add \$4.25 to list price of No. 671 for Aluminum Cover. These units are packed in individual cartons.</p>										

HOLOPHANE SPECIFICS FOR LOW BAYS & LOCALIZED GENERAL LIGHTING

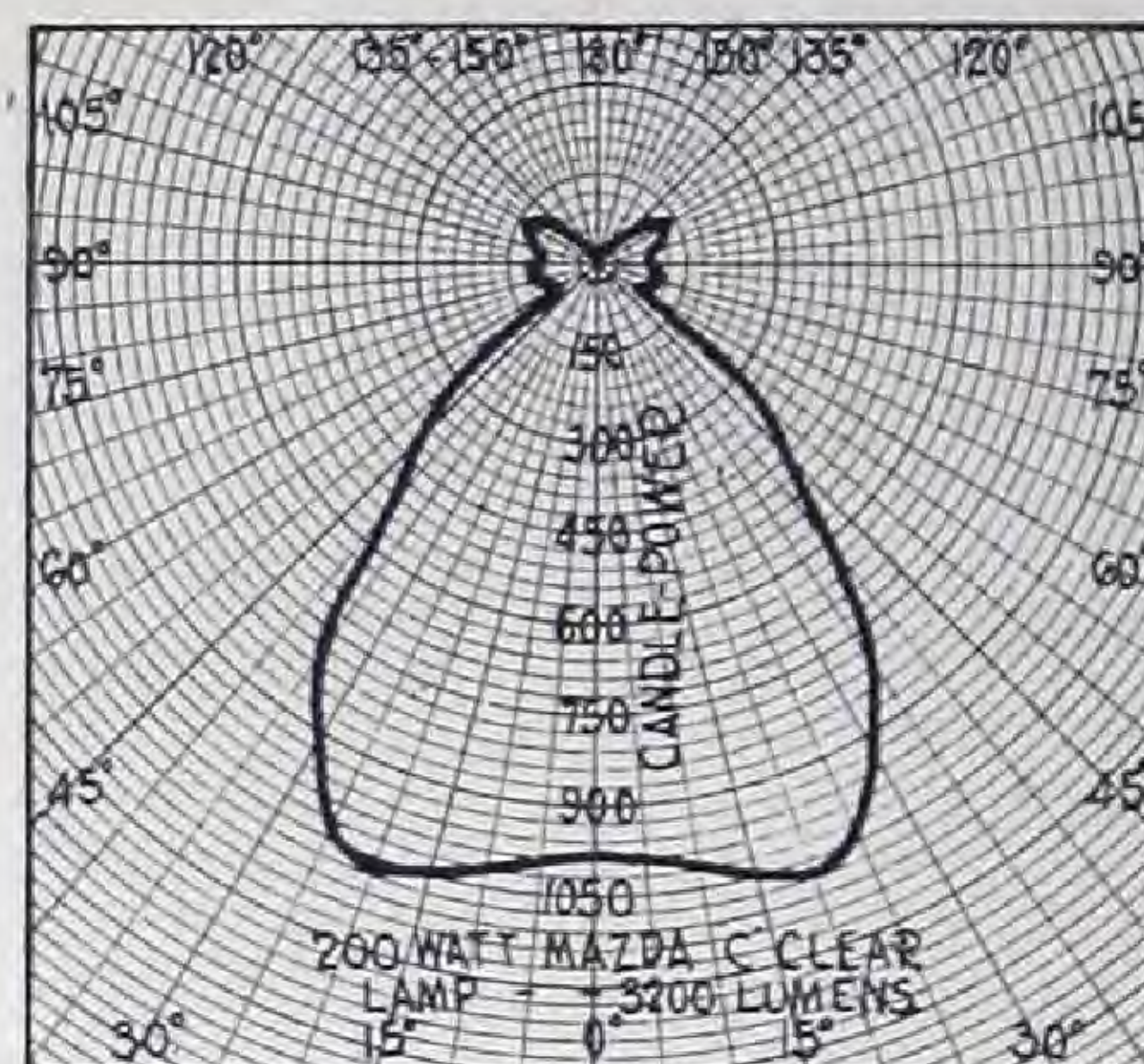
SCHEDULE "I" DISCOUNTS



No. 653-654



Characteristic Curve
653-6531-6533



Characteristic Curve
654-6541-6543

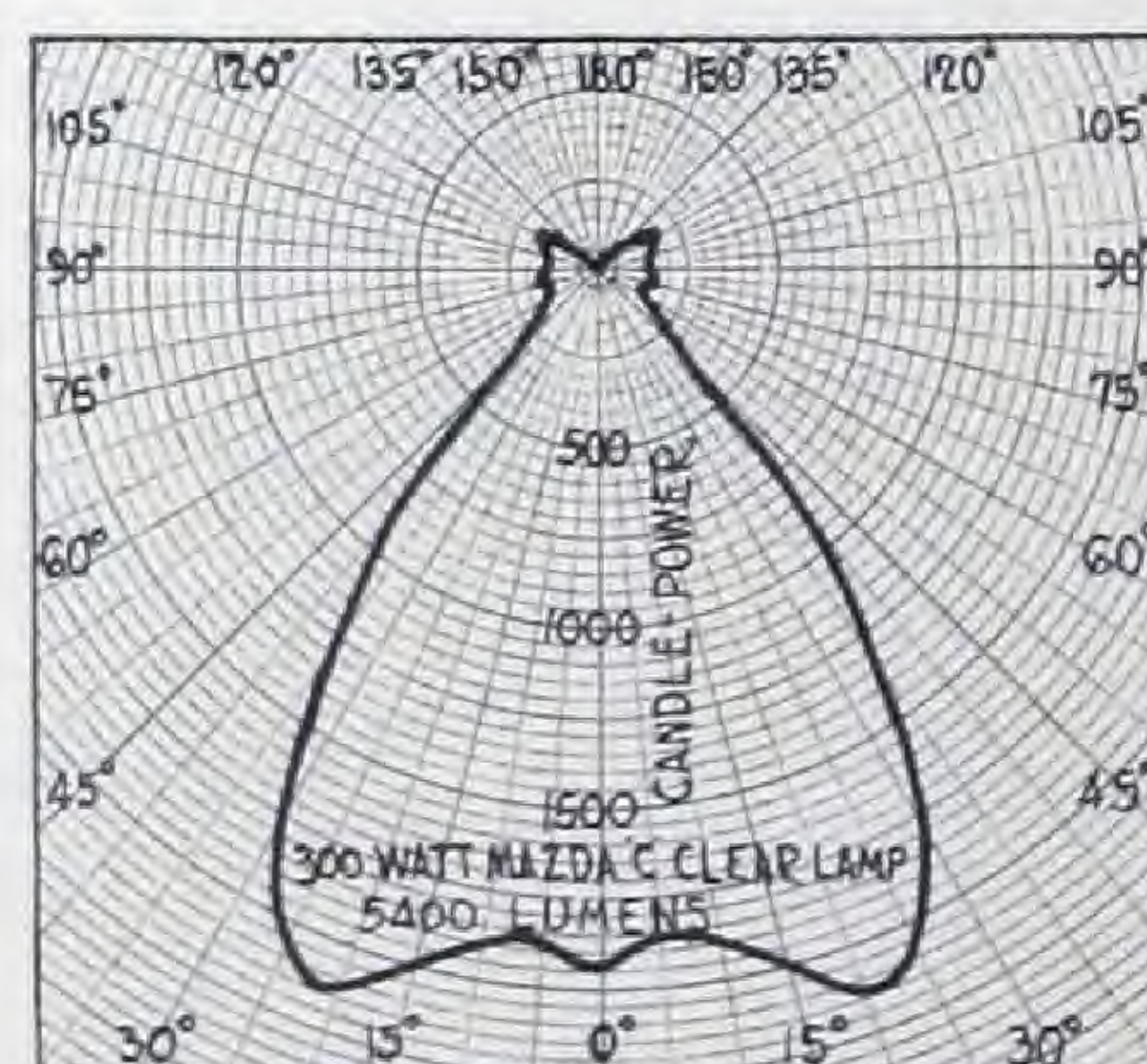


No. 6531-6541

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
653*	..... 0936	.....	\$2.10	8	70	9"	7 1/8"	100†-150
		.....	.65	8	18	3 3/4"	2 1/2"	
		6573*	1.45	8	50	9"	5 1/8"	100†-150
654*	..... 0936	.....	3.10	6	45	10 3/8"	8 1/2"	200
		.....	.65	6	7	3 3/4"	2 1/2"	
		6575*	2.45	6	30	10 3/8"	6 1/4"	200
6531*	..... 0641	.....	3.90	8	73	9"	9 1/2"	100†-150
		.....	2.45	8	20	4 1/2"	4 1/2"	
		6573*	1.45	8	50	9"	5 1/8"	100†-150
6541*	..... 0641	.....	4.90	6	40	10 3/8"	10 5/8"	200
		.....	2.45	6	10	4 1/2"	4 1/2"	
		6575*	2.45	6	30	10 3/8"	6 1/4"	200



No. 6533-6543-6583



Characteristic Curve 6583

6533*	..... 0643	.....	3.30	8	43	9"	9 3/4"	100†-150
		.....	1.85	8	20	3 3/4"	4 3/4"	
		6573*	1.45	8	23	9"	5 1/8"	100†-150
6543*	..... 0643	.....	4.30	6	40	10 3/8"	11"	200
		.....	1.85	6	10	3 3/4"	4 3/4"	
		6575*	2.45	6	30	10 3/8"	6 1/4"	200
6583*	..... 0644	.....	7.60	10	98	11 3/8"	12 1/2"	300
		.....	3.35	10	23	3 3/4"	6"	
		6588*	4.25	10	75	11 3/8"	6 3/4"	300

† Use 1/8" socket extension with 100 watt lamp.

* Standard finish—velvet finish glass.

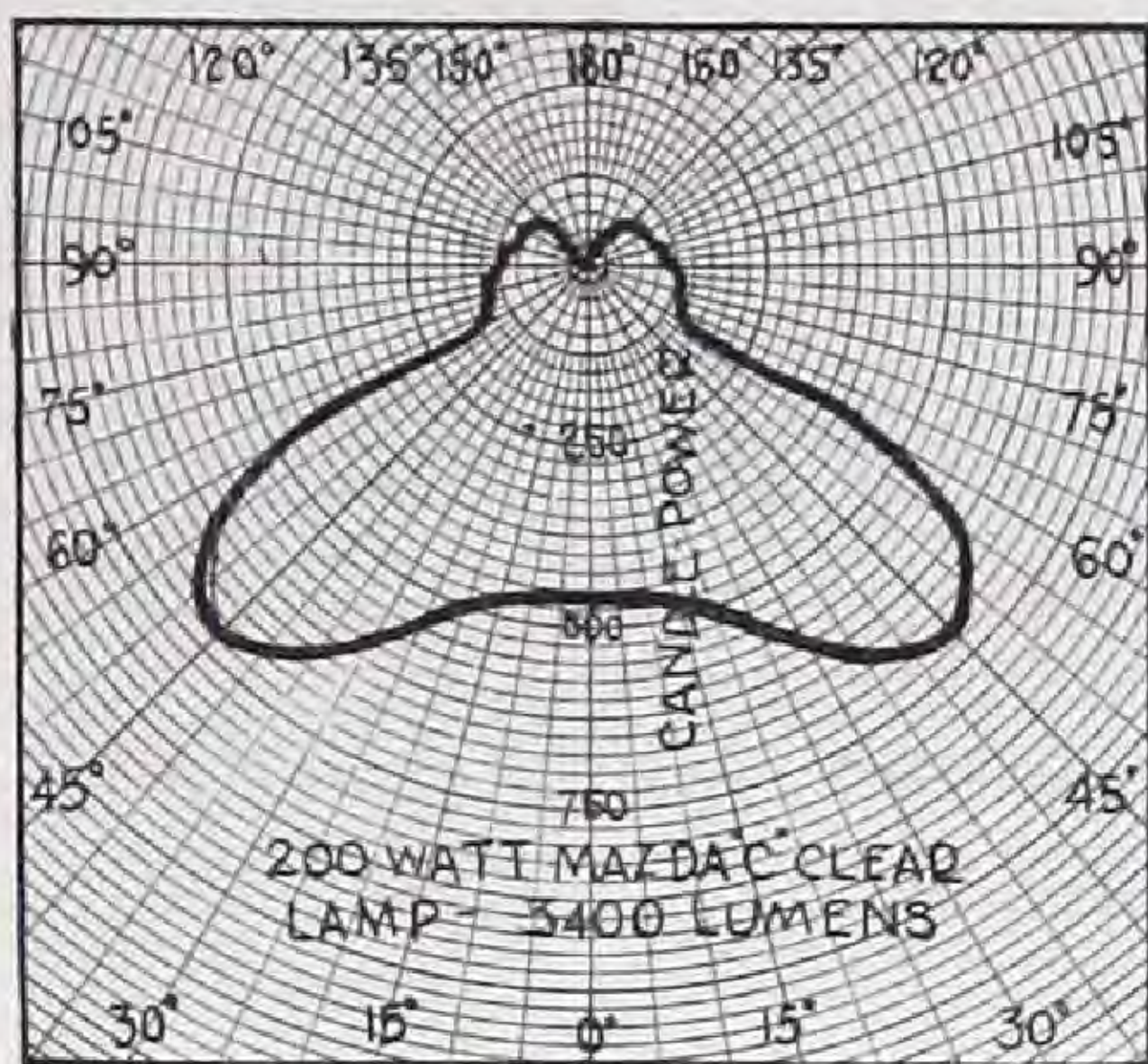
Aluminum covers spun permanently over the reflectors can be supplied on any of these numbers at \$3.65 list each additional.

HOLOPHANE SPECIFICS FOR LOW BAYS & LOCALIZED GENERAL LIGHTING

SCHEDULE "I" DISCOUNTS



No. H-CSE-100-200



Characteristic Curve
H-CSE-100-200-CSE-100-200-BC

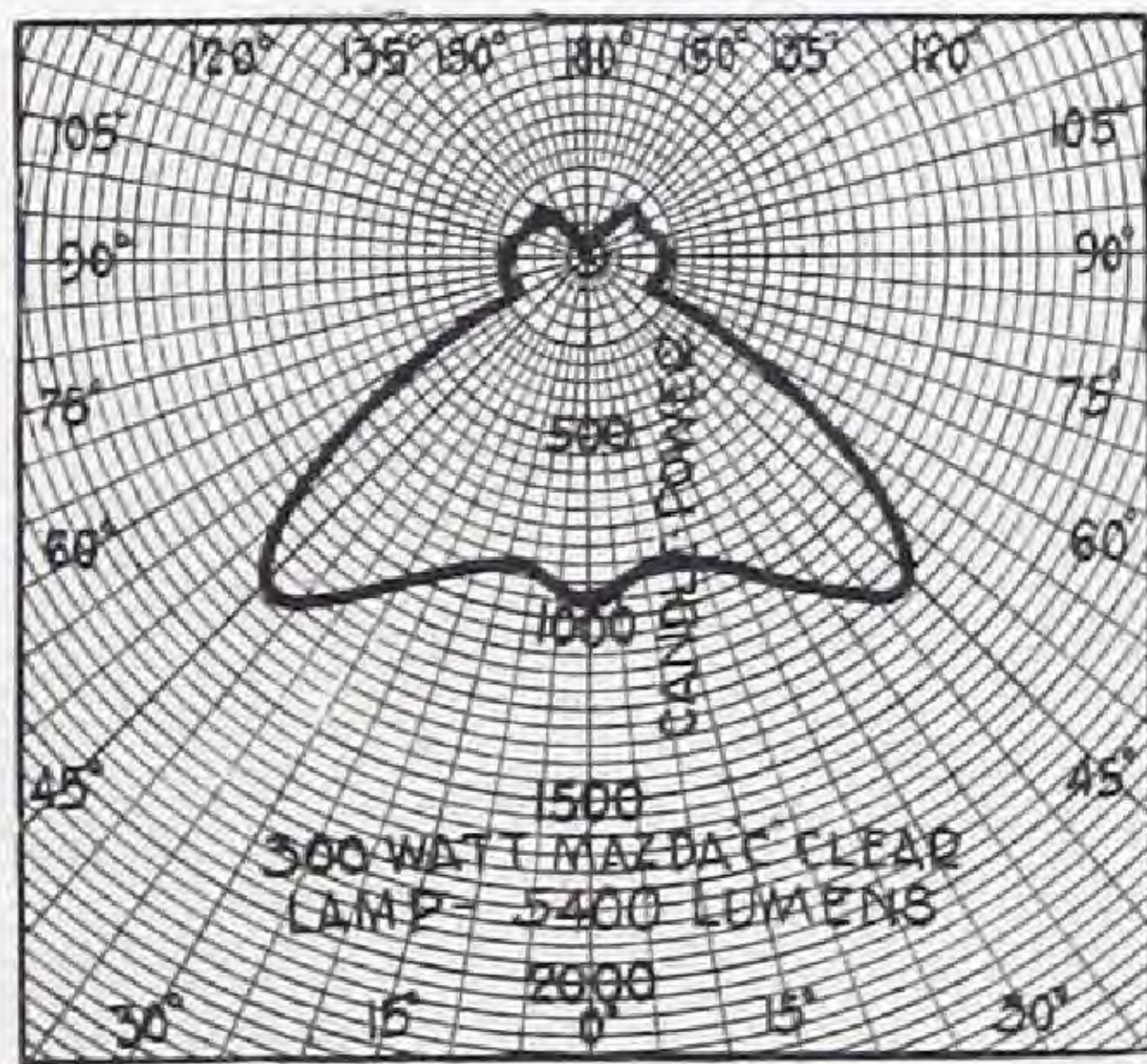


No. CSE-100-200-BC

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
H-CSE-100*	0657	.....	\$3.45	8	33	8 1/8"	9 1/4"	100†-150
		.....	2.00	8	12	3 3/8"	3 13/16"	
		CSE-100	1.45	8	21	8 1/8"	6"	100†-150
H-CSE-200*	0651	.....	4.65	6	40	9 3/4"	10 5/8"	200
		.....	2.00	6	11	4 1/2"	3 3/4"	
		CSE-200	2.65	6	30	9 3/4"	7 3/8"	200
CSE-100-BC*	0654	.....	3.95	8	33	8 1/8"	8 3/4"	100†-150
		.....	2.50	8	12	4 1/2"	3 1/4"	
		CSE-100	1.45	8	21	8 1/8"	6"	100†-150
CSE-200-BC*	0656	.....	5.65	6	41	9 3/4"	10 1/2"	200
		.....	3.00	6	11	4 1/2"	3 5/8"	
		CSE-200	2.65	6	30	9 3/4"	7 3/8"	200



No. 6484



Characteristic Curve
6484-6488-BC



No. 6488-BC

6484	0650	.....	\$7.45	8	90	12"	12 3/8"	300
		.....	2.50	8	15	4 1/2"	4 1/2"	
		6488	4.95	8	75	12"	8 1/2"	300
6488-BC	0655	.....	8.45	8	92	12"	11 5/8"	300
		.....	3.50	8	17	4 1/2"	3 5/8"	
		6488	4.95	8	75	12"	8 1/2"	300

† 7/8" socket extension required with 100 watt lamp. *Standard finish—velvet finish glass.

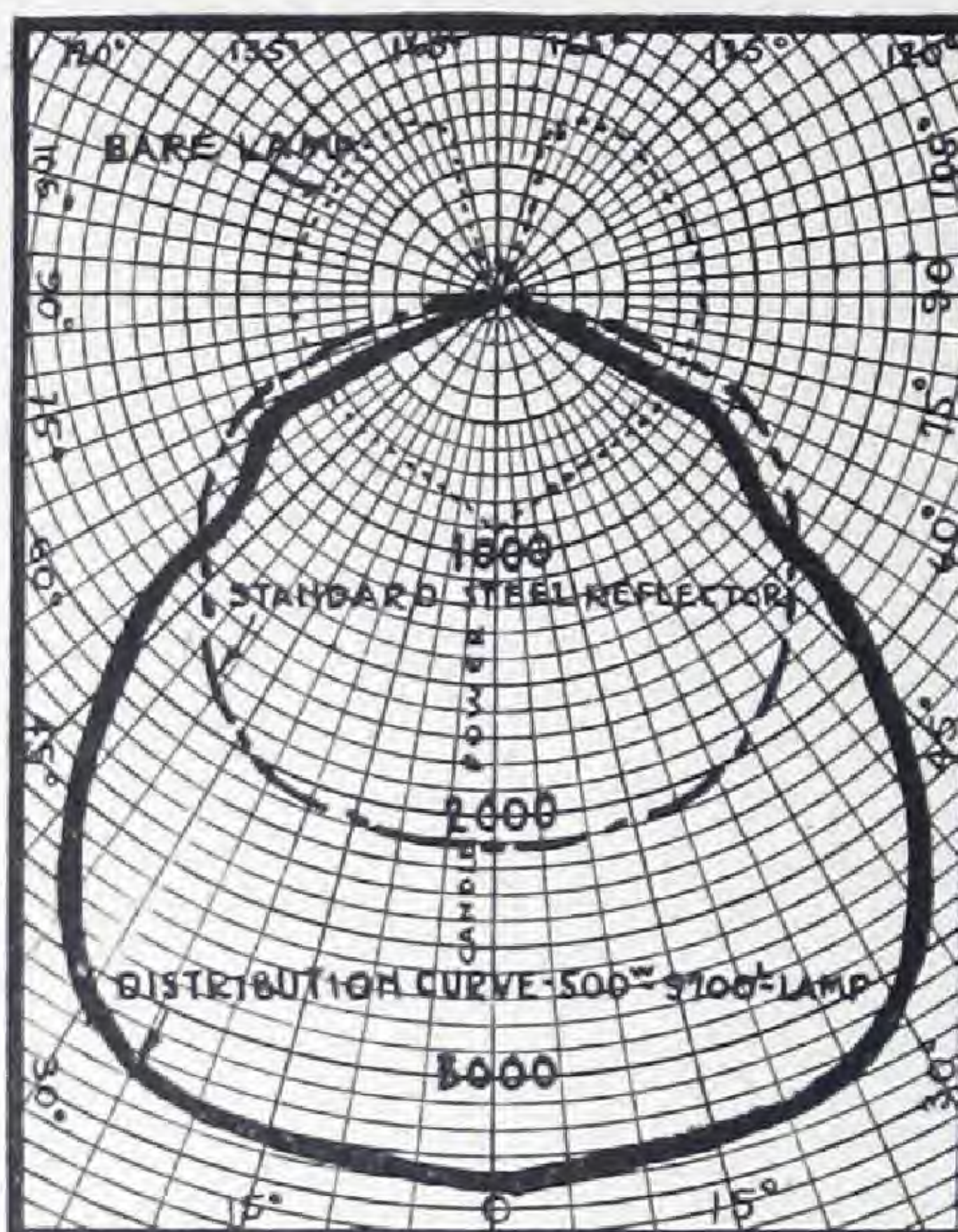
HOLOPHANE SPECIFIC FOR STANDARD INDUSTRIAL REPLACEMENT

Obsolete reflectors that have depreciated to a point where they are practically no value as reflectors are still in use in industrial plants; also a large class of misapplication of more modern reflectors whose distribution of light is not effective for the work performed. Many industrial locations require more light but, because of the rewiring expense, work is continued under the handicap of poor lighting.

To correct this inefficiency and inadequacy without rewiring expense Holophane has designed a Standard Industrial Replacement Unit, No. 685, for use on present outlets to increase illumination without increasing current consumption. This new unit increases the illumination on the work from 30 to 100% and does not permanently depreciate in use. It eliminates glare conditions that go hand in hand with obsolete equipment.



No. 685



Characteristic Curve



No. 685-AL

The deep prismatic glass bowl is held rigidly between a socket cover and a supporting ring by three rods with knurled nuts. By unscrewing the nuts and lowering the bottom ring the glass is easily removed either for cleaning, replacement, or for attaching the removable aluminum cover used when ceilings are dark or the unit in dirty locations. Unit has $\frac{1}{2}$ " female pipe thread fitting. Mogul socket is standard. When specified for use with 200 watt lamp a mogul to medium adapter is furnished. Standard fixture finish cadmium plate.

For best results the spacing should not exceed $11\frac{1}{2}$ times the mounting height above the work. However, enameled metal reflectors can be replaced by this new unit regardless of the spacing with no sacrifice in uniformity and a 30% gain in illumination can be expected.

SCHEDULE "T" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
685	.....	.....	\$7.70	4	47	12 $\frac{1}{2}$ "	12 $\frac{3}{8}$ "	200*-300-500
	0685	.....	3.85	4	15	5 $\frac{3}{4}$ "	5 $\frac{1}{8}$ "	
	.....	6585	3.85	4	32	12 $\frac{1}{2}$ "	7 $\frac{1}{4}$ "	200*-300-500
685-AL	.....	.....	\$9.90	4	50	12 $\frac{1}{2}$ "	12 $\frac{3}{8}$ "	200*-300-500
	0685	.....	3.85	4	15	5 $\frac{3}{4}$ "	5 $\frac{1}{8}$ "	
	.....	6585-AL†	6.05	4	35	12 $\frac{1}{2}$ "	7 $\frac{1}{4}$ "	200*-300-500

* Use mogul to medium adapter with 200 watt lamp.

† The aluminum cover is a separate part and can be furnished at \$2.20 list each.

HOLOPHANE VAPOR-PROOF SPECIFICS

This equipment has a broad application in acid plants, distilleries, rectification plants, paint shops, electro-plating and pickling departments, oil refineries, powder plants, etc.

The units consist of heavy duty prismatic glass globes with threaded fitters which engage cast silicon aluminum fittings for mounting on 1/2" conduit.

Unlike ordinary vapor proof lighting units these specifics permit accurate control of the light from the lamp resulting in high utilization efficiency, at the same time providing a gas proof chamber for the lamp.

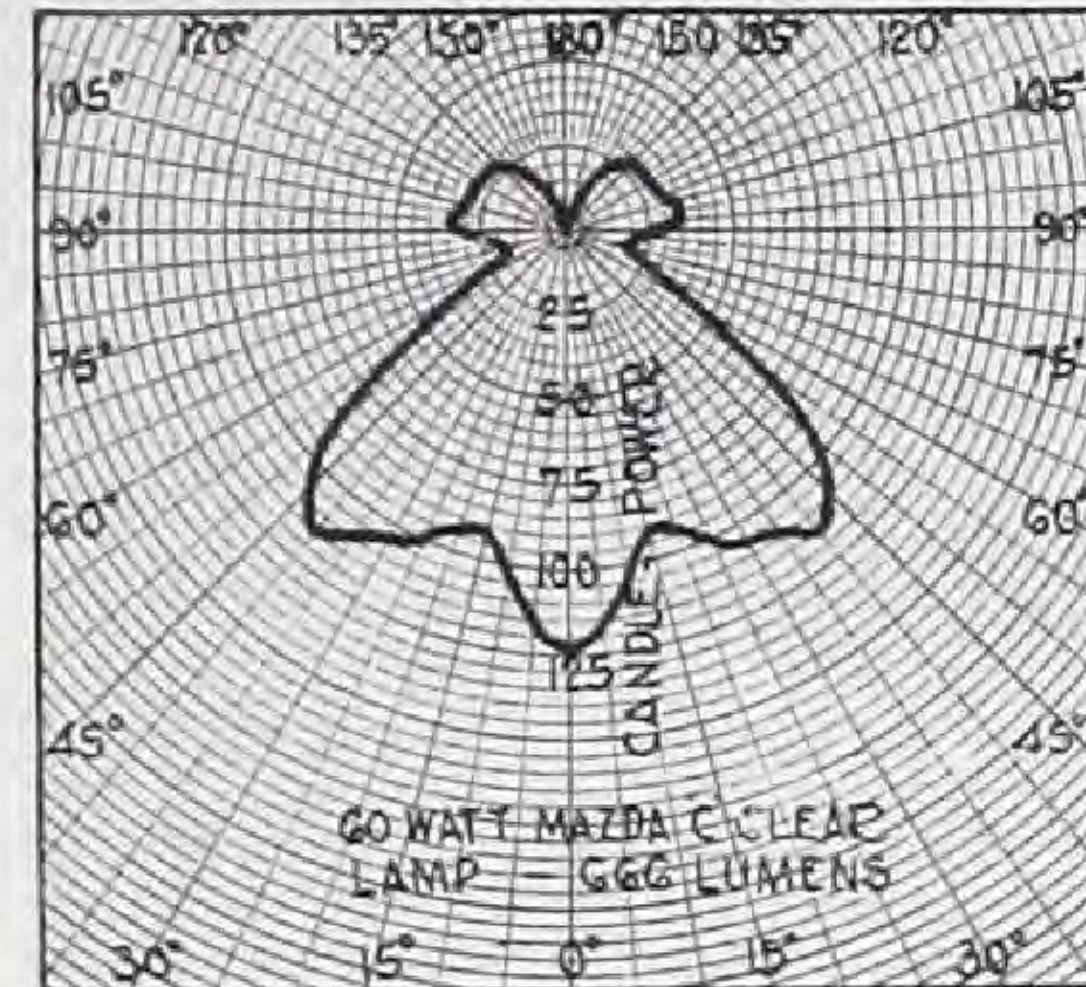
Use Nos. 02208, 02470 and 02480 on spacings not exceeding twice the mounting height. Use No. 02328 on spacings not exceeding 2 1/2 times the mounting height. Use No. 02338 on spacings not greater than the mounting height.



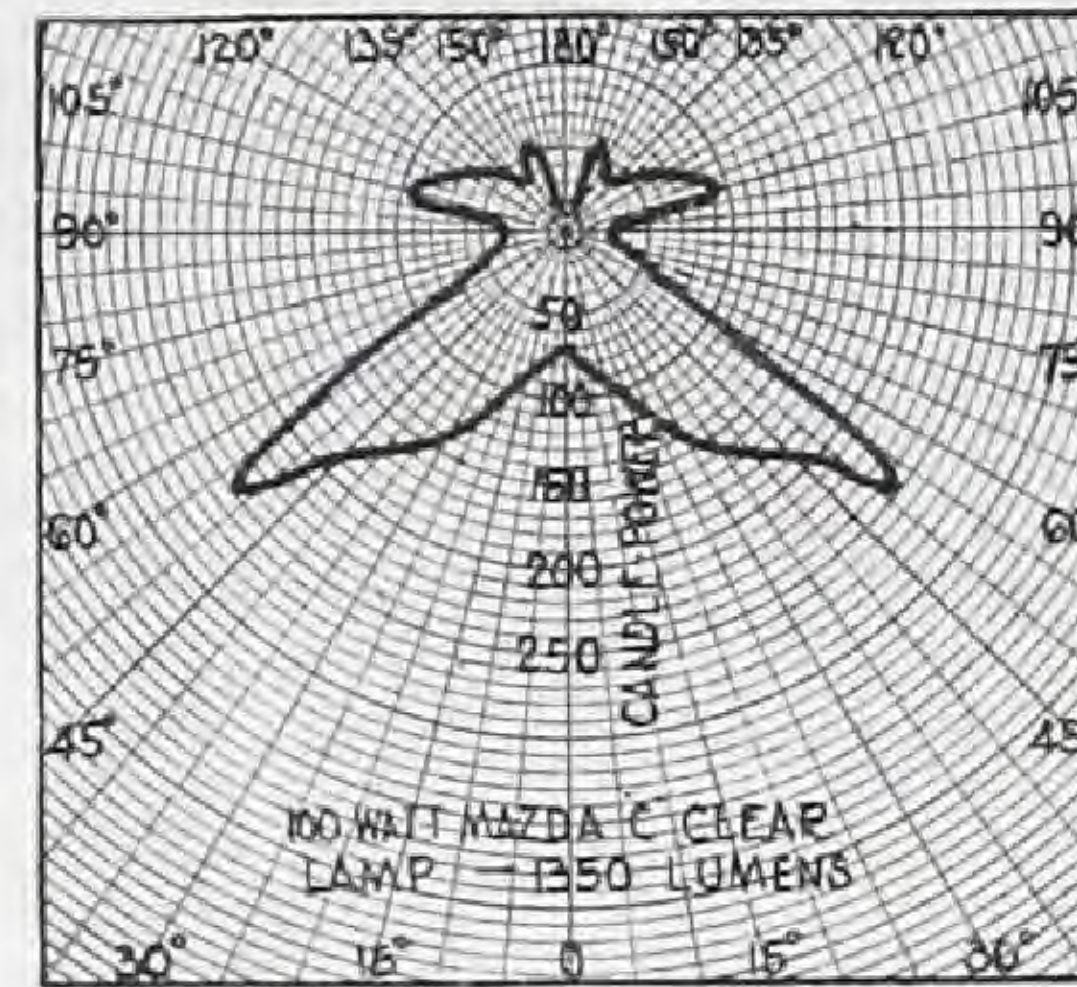
No. 02470-02472-02476



No. 02208



Characteristic Curve No. 02208



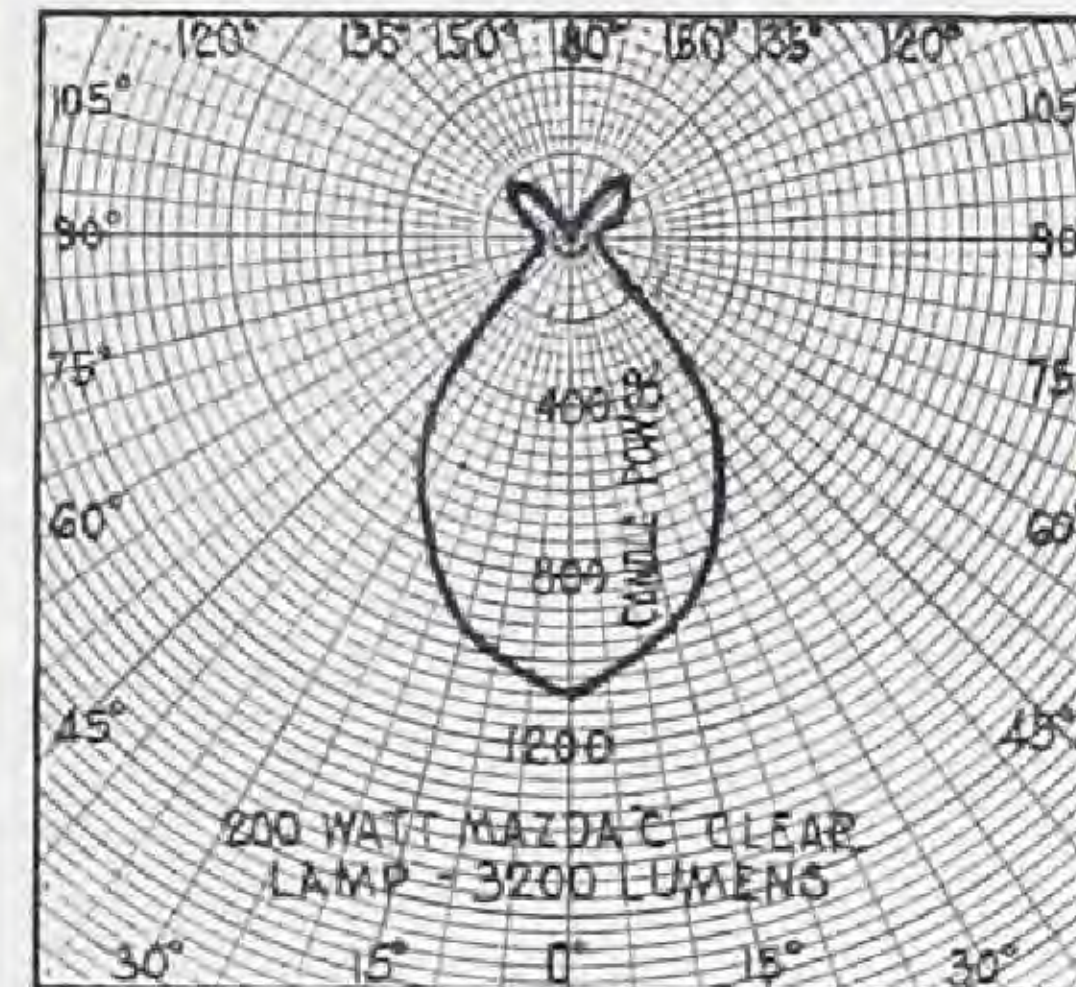
Characteristic Curve No. 02328



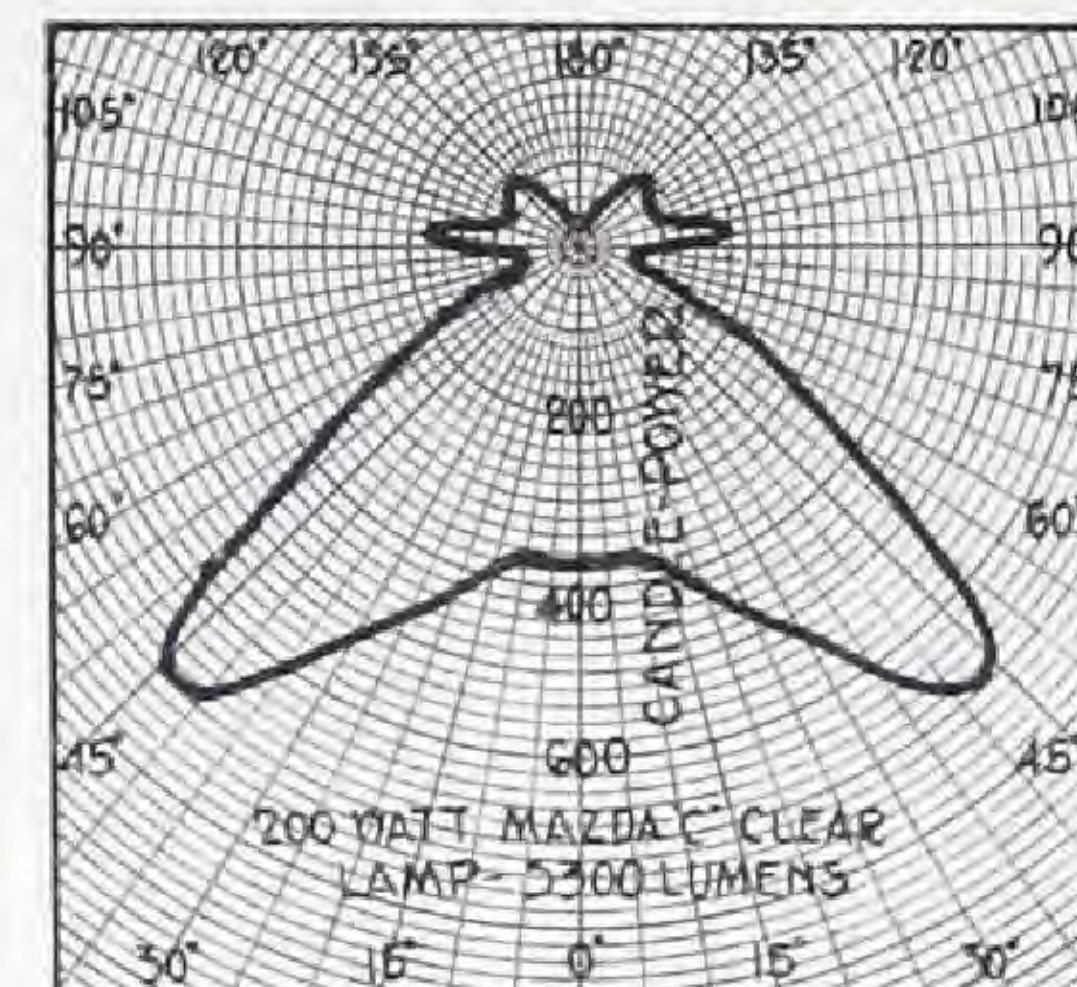
No. 02328



No. 02338



Characteristic Curve No. 02338



Characteristic Curve No. 02480



No. 02480

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
02208	0231	....	\$5.95	20	110	6 3/8"	8 3/4"	40†-50-60
		....	3.50	20	35	3 7/8"	3 1/4"	
		2208	2.45	20	75	6 3/8"	6 3/4"	40†-50-60
02328	0232	....	8.15	8	63	8 5/16"	10 3/4"	75†-100†-150
		....	4.50	8	20	5 5/8"	3 3/4"	
		2328	3.65	8	43	8 5/16"	8 3/4"	75†-100†-150
02470	0234	....	9.25	8	68	9 7/8"	10 1/2"	100†-150
		....	4.00	8	18	5 1/4"	3 5/8"	
		2470†	5.25	8	50	9 7/8"	8"	100†-150
02472	0234-L	....	9.25	8	68	9 7/8"	10 1/2"	100†-150
		....	4.00	8	18	5 1/4"	3 5/8"	
		2472†	5.25	8	50	8 7/8"	8"	100†-150
02476	0234-L	....	8.65	8	68	9 7/8"	9 7/8"	100†-150
		....	4.00	8	18	5 1/4"	3 5/8"	
		2476†	4.65	8	50	9 7/8"	7 1/8"	100†-150
02338	0233	....	11.75	4	77	10 3/8"	12 3/8"	200
		....	4.50	4	25	5"	5 1/4"	
		2338	7.25	4	52	10 3/8"	8 3/8"	200
02480	0238	....	16.10	4	58	12 1/8"	13 3/4"	200
		....	4.00	4	14	7"	3 1/2"	
		2480†	12.10	4	48	12 1/8"	10 3/4"	200

Special fitters for use with this Holophane glass are obtainable from Crouse Hinds, Appleton, VV Fittings, Pyle National and Russell Stoll Companies.

† Use 7/8" socket extension.

‡ These units are packed in individual cartons.

HOLOPHANE SPECIFICS FOR INDUSTRIAL USE

Holophane Enclosed Industrial Units Symmetrical Distributions

In certain industrial locations there is a preference for a totally enclosed unit for general lighting. Holophane enclosed units permit greater diffusion and completely shield the lamp from view.

They are heavy two-piece prismatic units securely banded with an aluminum band to form a one-piece enclosing globe.

Fitters for conduit mounting and outlet box attachment are provided for No. 2470 while the larger sizes are arranged for $\frac{1}{2}$ " conduit mounting. Give glass number and fitter number when ordering 2470 type to insure correct mounting method.

All the units listed on this page give symmetrical light patterns for general lighting.

No. 02490-S is recommended for the illumination of Printing Plants. For Cigar Factories and other locations where color is of great importance use No. 02490-JDW which has a daylight blue glass lower member.



Fitter No. 0362
for $\frac{1}{2}$ " conduit
suspension



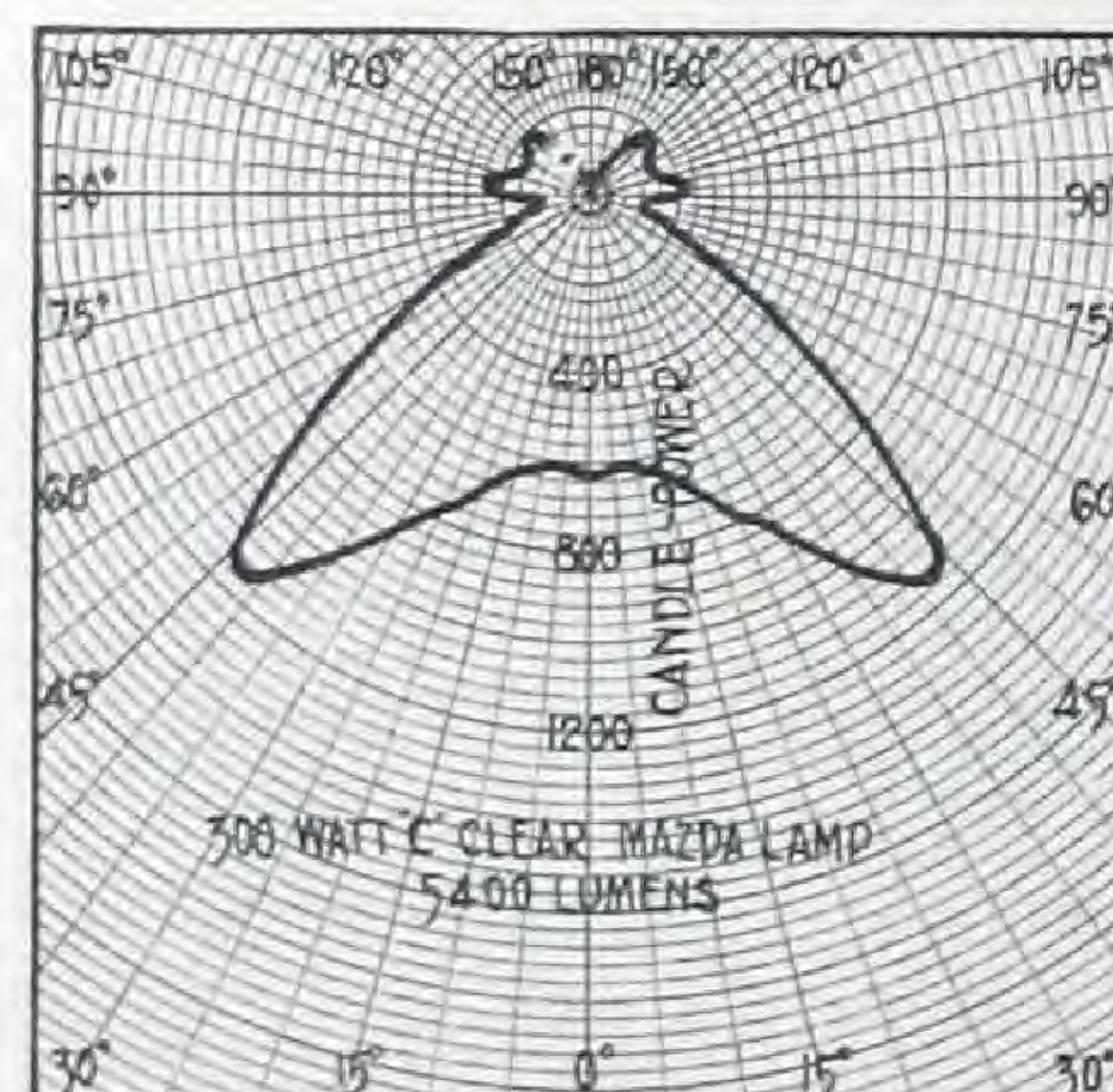
No. 2470



Fitter No. 0363-BC
for direct attach-
ment to $3\frac{1}{4}$ "
outlet box



No. 02490-S-02180-A-S



Characteristic Curve



No. 02490-JDW

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
.....	.....	2470†	\$5.25	8	50	9 $\frac{7}{8}$ "	8"	100†-150
.....	0362	.....	2.00	8	20	4 $\frac{1}{4}$ "	2 $\frac{7}{8}$ "	
.....	0363-BC	.....	1.00	8	15	4 $\frac{1}{4}$ "	1 $\frac{1}{8}$ "	
02180-A-S	.....	.....	13.00	4	58	12"	11 $\frac{5}{8}$ "	200
	0370	.....	2.50	4	10	12"	2 $\frac{7}{8}$ "	200
	.....	2180-A	10.50	4	48	12"	9 $\frac{1}{2}$ "	200
02490-S	.....	.....	13.45	4	60	12 $\frac{1}{4}$ "	13 $\frac{3}{8}$ "	300
	0369	.....	3.00	4	10	6 $\frac{7}{8}$ "	3 $\frac{7}{8}$ "	300
	.....	2490†	10.45	4	50	12 $\frac{1}{4}$ "	10 $\frac{1}{4}$ "	300
02490-JDW*	.....	.....	20.70	4	60	12 $\frac{3}{4}$ "	13 $\frac{3}{8}$ "	300

Aluminum covers spun on any of the above reflectors at an additional charge of \$3.65 list.

† These units are packed in individual cartons. † Use $\frac{7}{8}$ " socket extension.

* Note:—This unit consists of glass No. 2490 with an aluminum cover spun over the upper glass member and a blue glass lower member. No. 0369 holder supplied.

HOLOPHANE SPECIFICS FOR INDUSTRIAL USE

Asymmetric Distributions

Special manufacturing processes cannot be satisfactorily lighted by general lighting units. Complicated and irregular shaped machines require a lighting system capable of giving an irregular (asymmetric) light pattern. Holophane asymmetric industrial units direct the light so that the important location on the machines receive the greatest possible amount of light.

No. 2472 distributes the light extensively in the pattern of an elongated oval. It is excellent for corridor and aisle lighting permitting wide spacings and utilizing light otherwise wasted on side walls and unimportant areas.

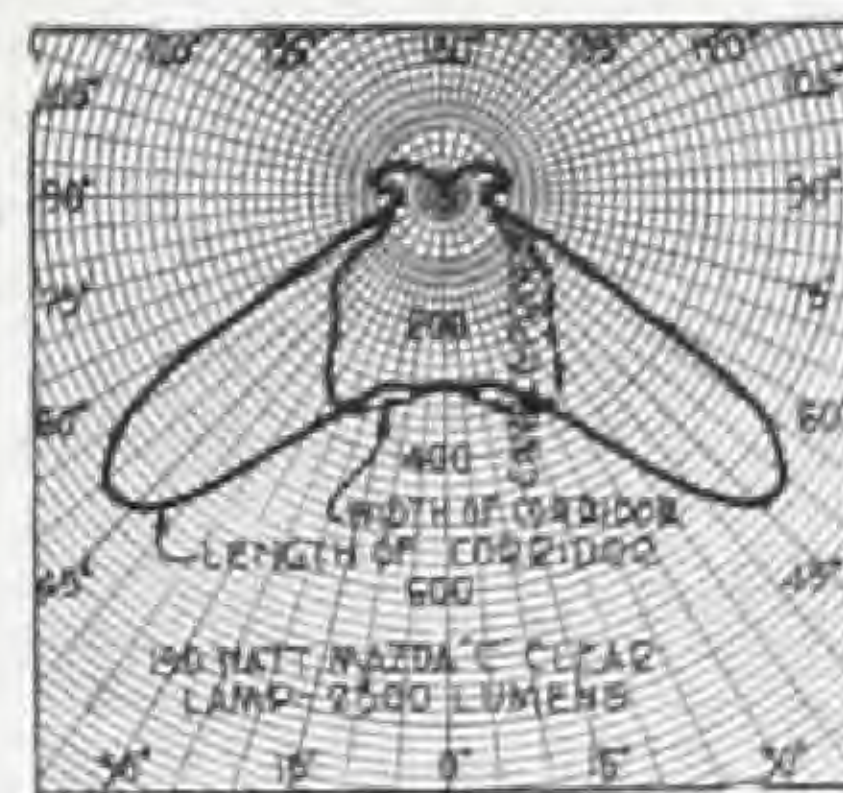
No. 2476 is designed to give uniform illumination on vertical surfaces. It is recommended for stock bins and for various textile operations requiring uniform vertical illumination.

Nos. 2472 and 2476 can be used with either 1/2" conduit screw fitter (No. 0362-L) or 3 1/4"-4" outlet box fitter (No. 0363-BC) and in ordering give glass number and fitter number.

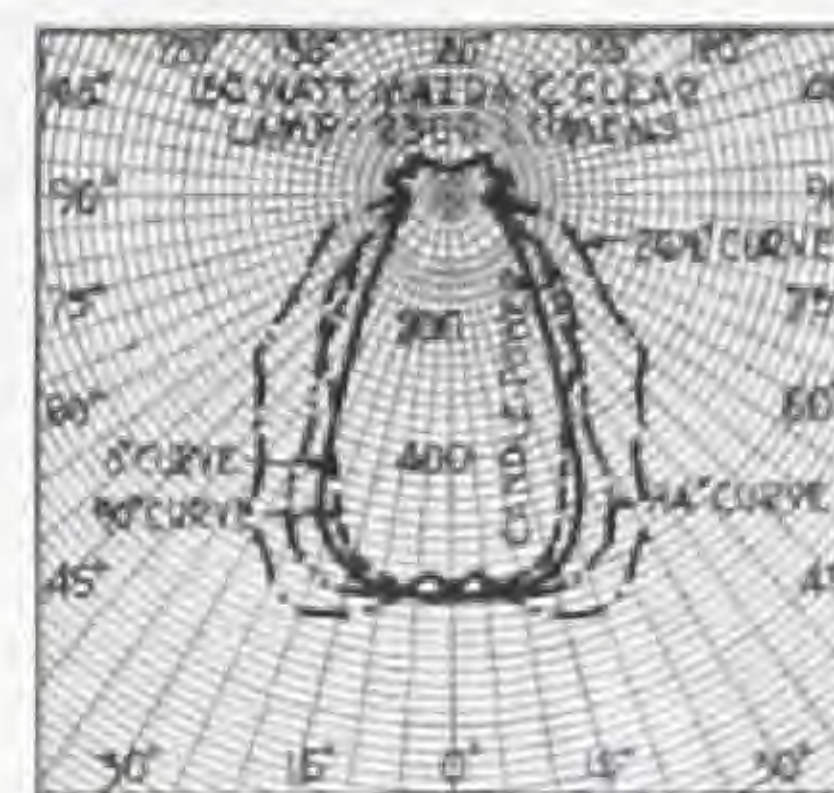
No. 02486-S is a special enclosing unit for the illumination of Leggers and Footers in Full Fashioned Hosiery Mills. By concentrating the available light on the important parts of the machine it is possible to greatly increase the illumination on the work and decrease the glare.



No. 2472



Characteristic
Curves No. 2472



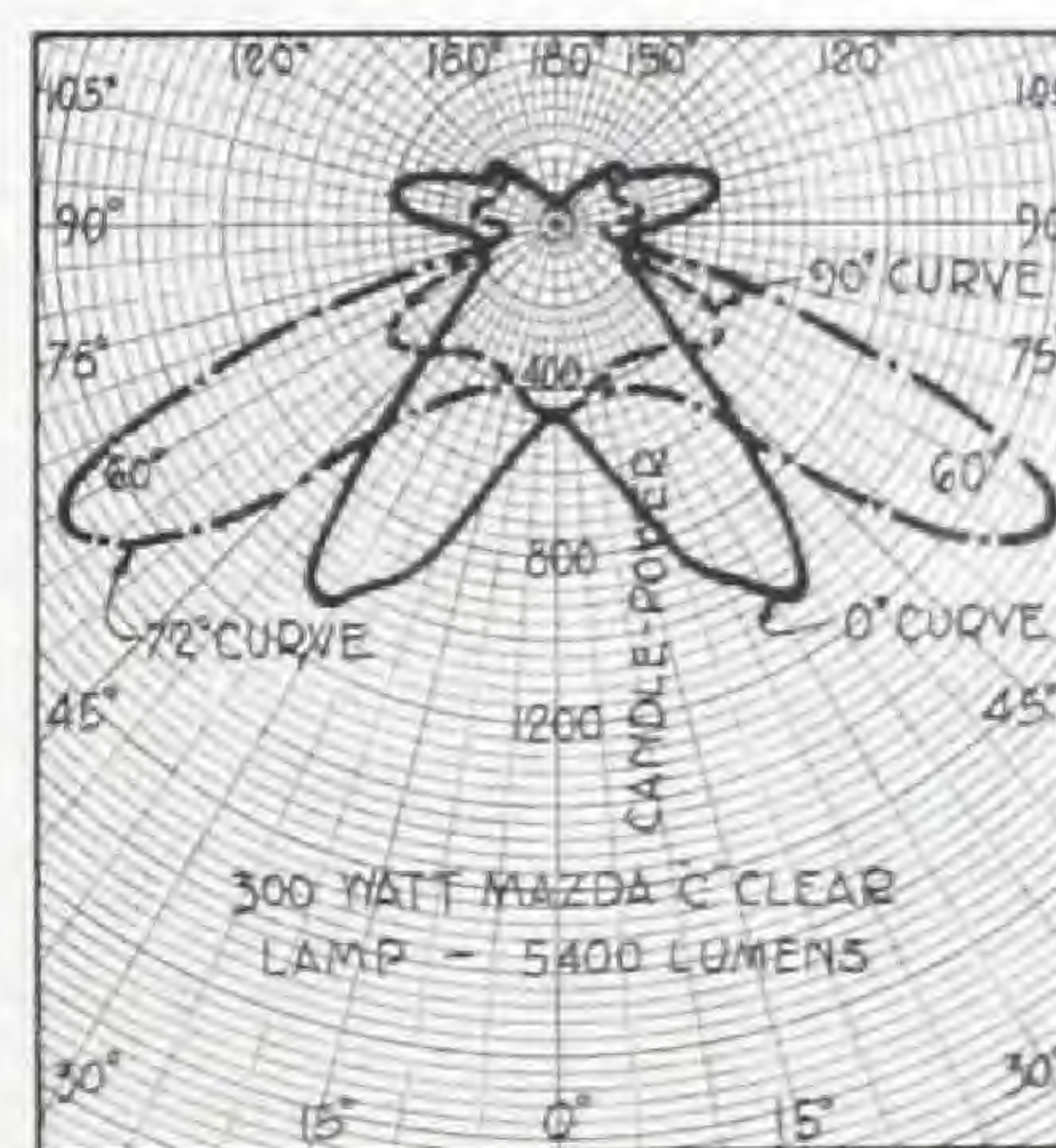
Characteristic
Curves No. 2476



No. 2476



No. 02486-S



Characteristic Curves
No. 02486-S

Legger units are usually spaced on 8 foot centers along the center line of the aisles and mounted 9 feet from floor to bottom of unit. Send details of your requirement to insure correct installation. The word "Aisle" marked on the bottom of any of these units should be parallel with the aisle.

SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship Weight St. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
.....	.....	2472†	\$5.25	8	50	9 7/8"	7 5/8"	100†-150
.....	.....	2476†	4.65	8	50	9 7/8"	7 1/8"	100†-150
.....	0362-L	.....	2.00	8	20	4 1/8"	2 7/8"	
.....	0363-BC	.....	1.00	8	15	4 1/4"	1 1/8"	
02486-S	.....	.....	13.45	4	60	12 1/4"	12 1/2"	300
	0369-L	.....	3.00	4	10	6 7/8"	3 7/8"	
	.....	2486†	10.45	4	50	12 1/4"	9 1/4"	300

† Use 7/8" socket extension.

Aluminum covers spun permanently over the reflectors can be supplied on any of these numbers at \$3.65 list.

‡ These units are packed in individual cartons.

Breweries — Warehouses

Outdoor Lighting — Gas Stations — Roadside Stands — Parking Spaces

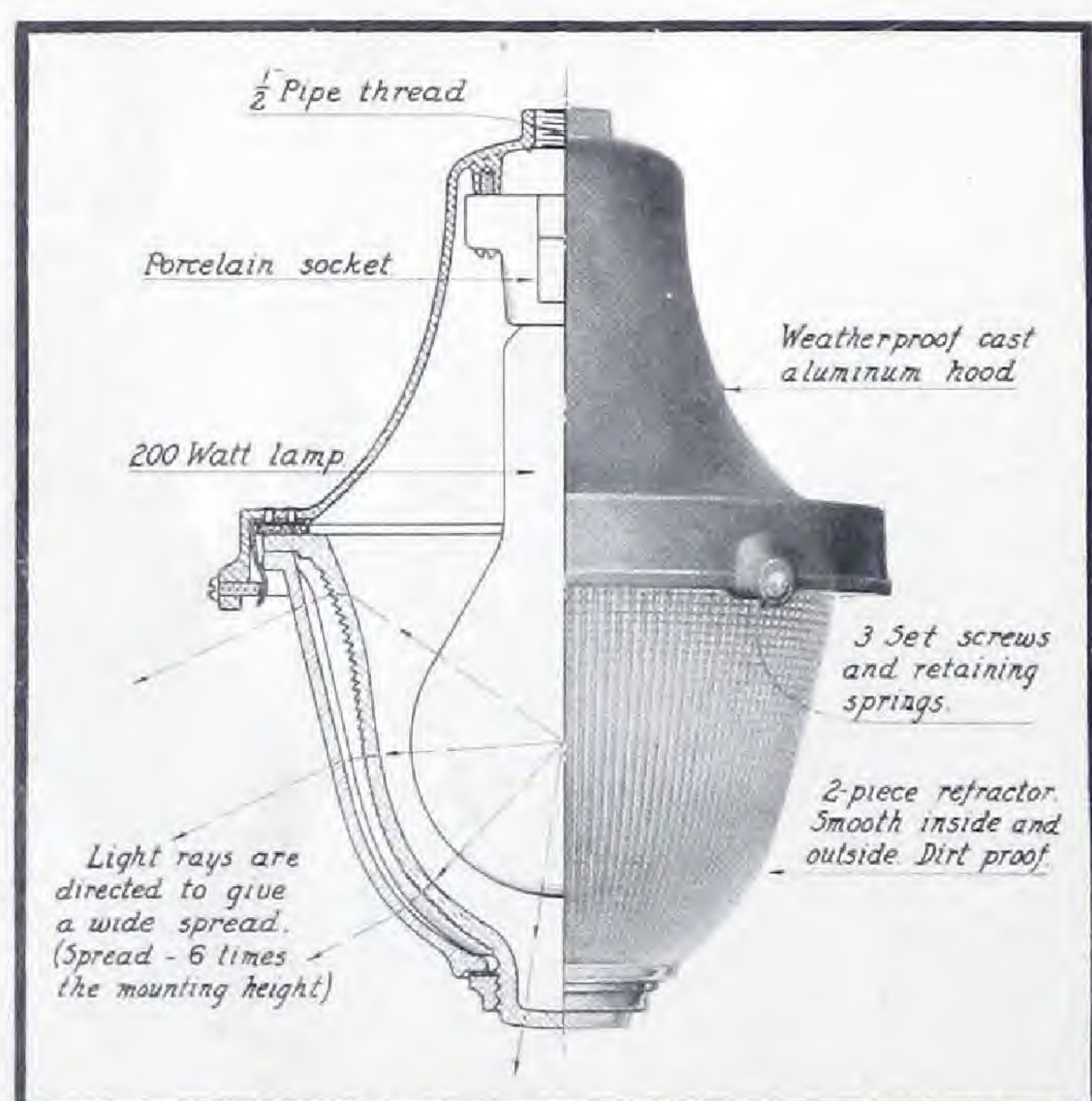
The unusual wide spread of light resulting from the use of these units has made them popular not only for breweries and warehouses but for the solution of outdoor lighting problems—especially gas station and road side stand lighting. Their design is such that the light is distributed over an area six times the mounting height.

The globes are heavy pressed double refractors sealed together weather-proof and dust tight with smooth inner and outer surfaces to resist dirt accumulation.

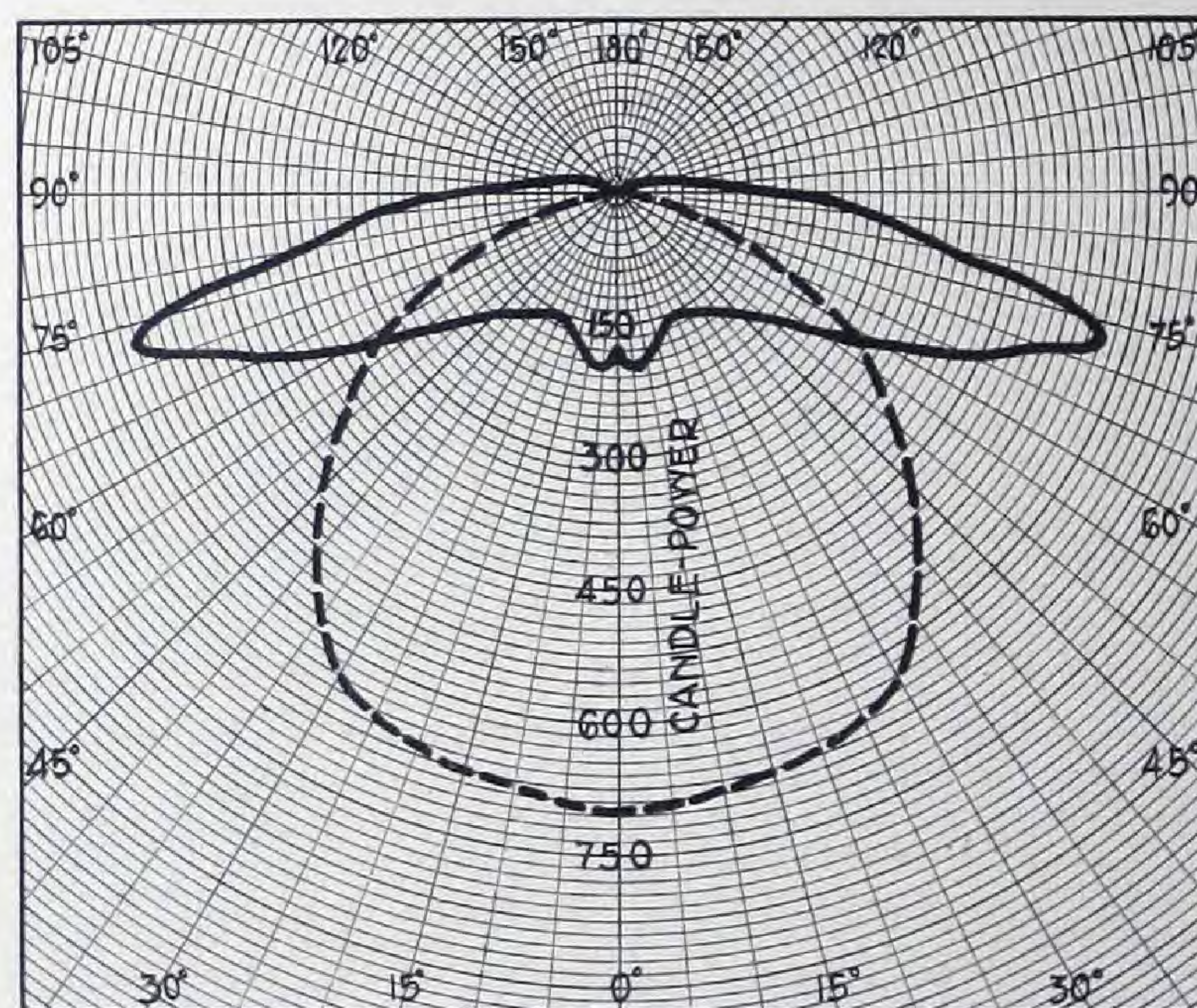
Fixtures for these units are cast silicon aluminum with $\frac{1}{2}$ " tapped hole on 830 and 832 and with indication for drilling holes on the 833, 834, 835 for $3\frac{1}{4}$ " or 4" outlet box mounting.

All fixtures have assembled in them a medium porcelain receptacle.

No. 0875 is a $\frac{1}{2}$ " iron pipe bracket used for supporting Nos. 830 and 832. Nos. 0865 and 0866 are decorative brackets of medium and heavy design finished either aluminum or black paint for use with 830 and 832. They are for flush wall or post mounting and are tapped $\frac{3}{4}$ " female pipe thread for attachment with a short nipple.



Showing construction and light control from Holophane "Wide-Spred" unit



Dotted line shows how the ordinary reflector confines the light close to the reflector. The full line shows how the "Wide-Spred" unit spreads the light over wide areas

These "Wide-Spred" specifics are recommended for use in the following locations:

Warehouses
Watchmen's Lighting Circuit
Factory Entrances
Outside of Building
Over Doors
Roadways
Shipping Platforms
Storage Spaces

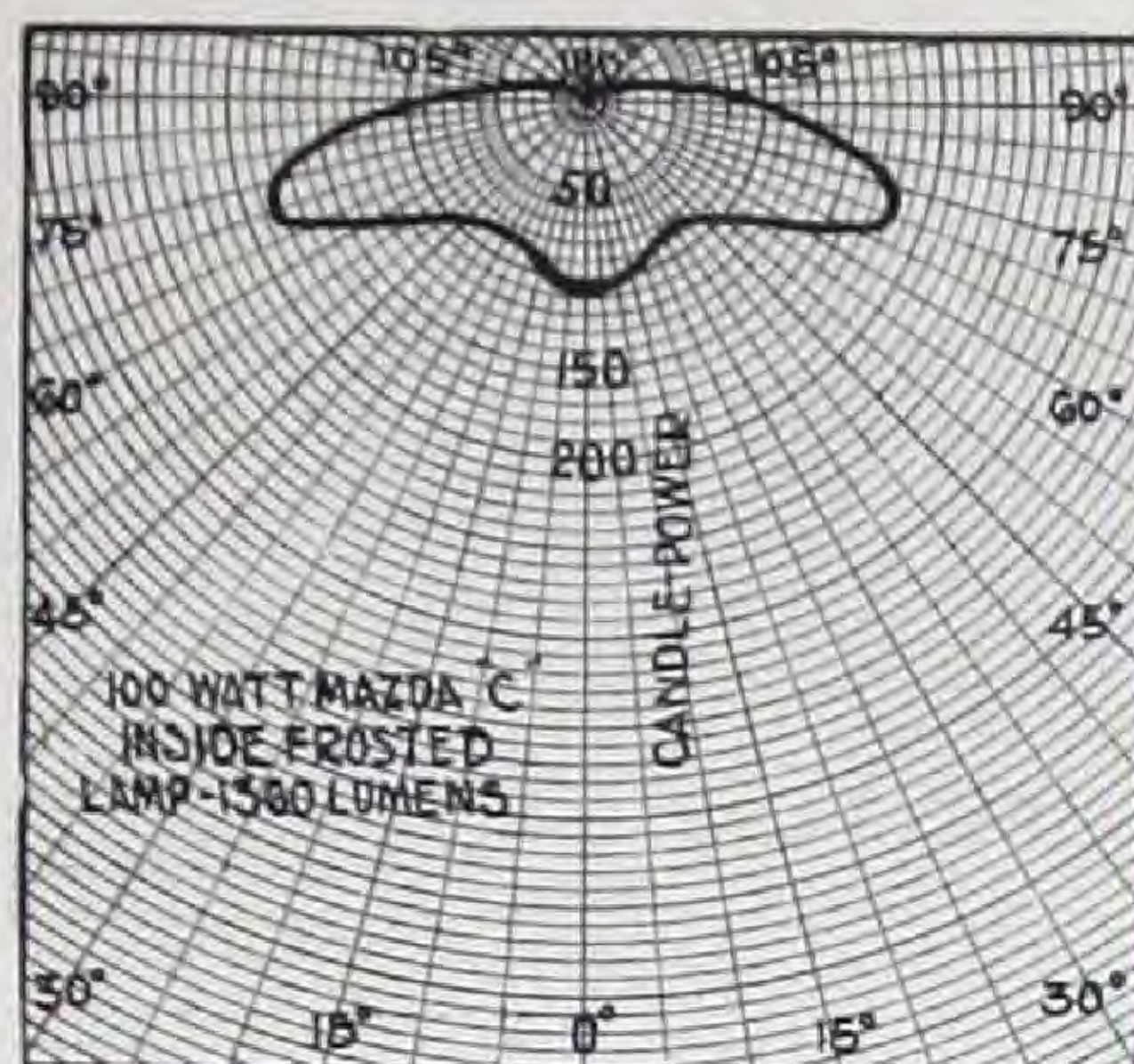
Watchmen's Gates
Parking Space Outdoors
Parking Garages (Indoors)
Gasoline Filling Stations
Country Club Driveways
Private Garages
Lighting Grounds around Private Houses
Breweries

HOLOPHANE SPECIFICS FOR "WIDE-SPRED" LIGHTING—"830 LINE"

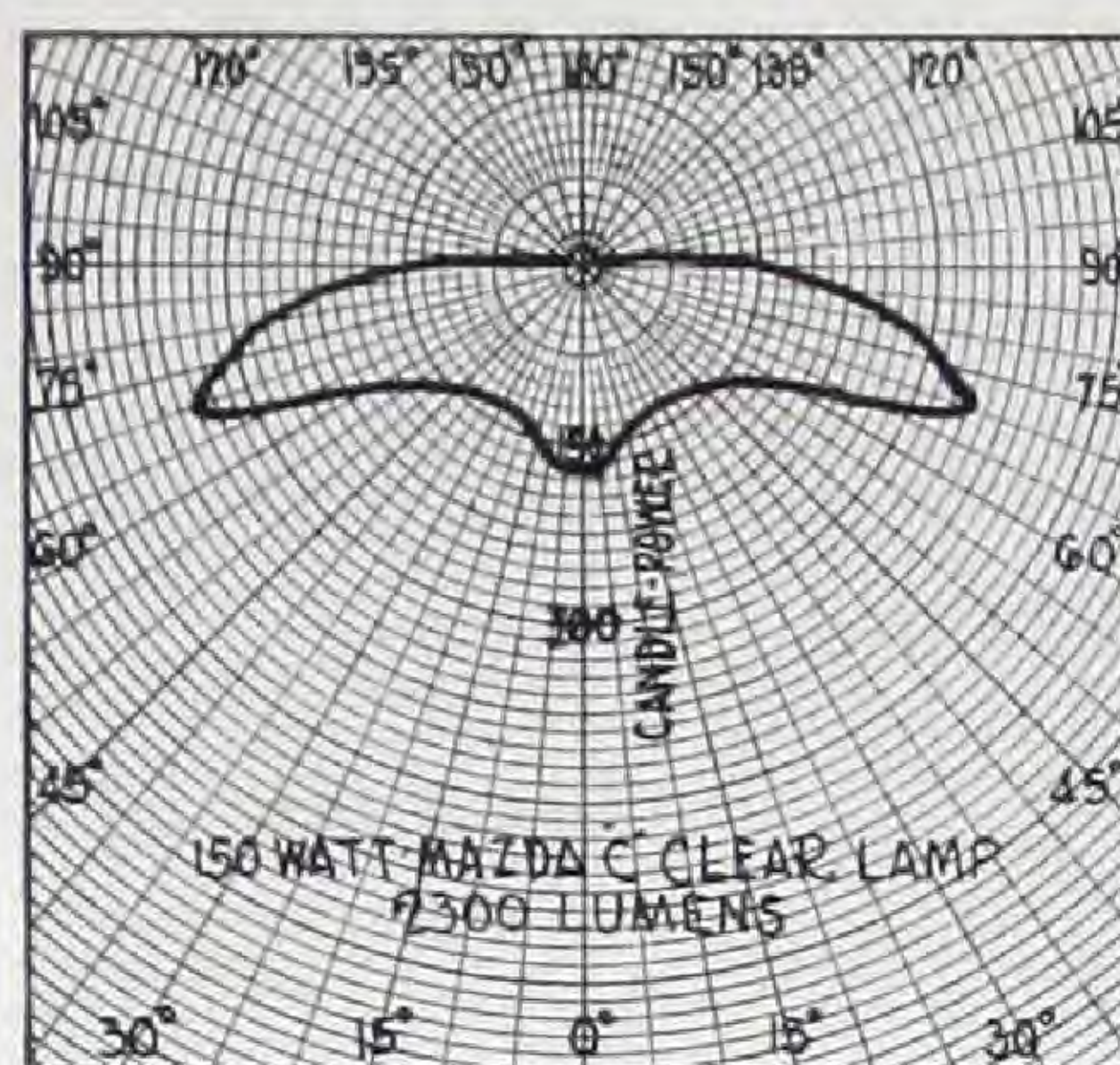
SCHEDULE "R" DISCOUNTS



No. 830—No. 832



Characteristic Curve
100 watt Lamp



Characteristic Curve
150 watt Lamp



Nos. 833, 834, 835

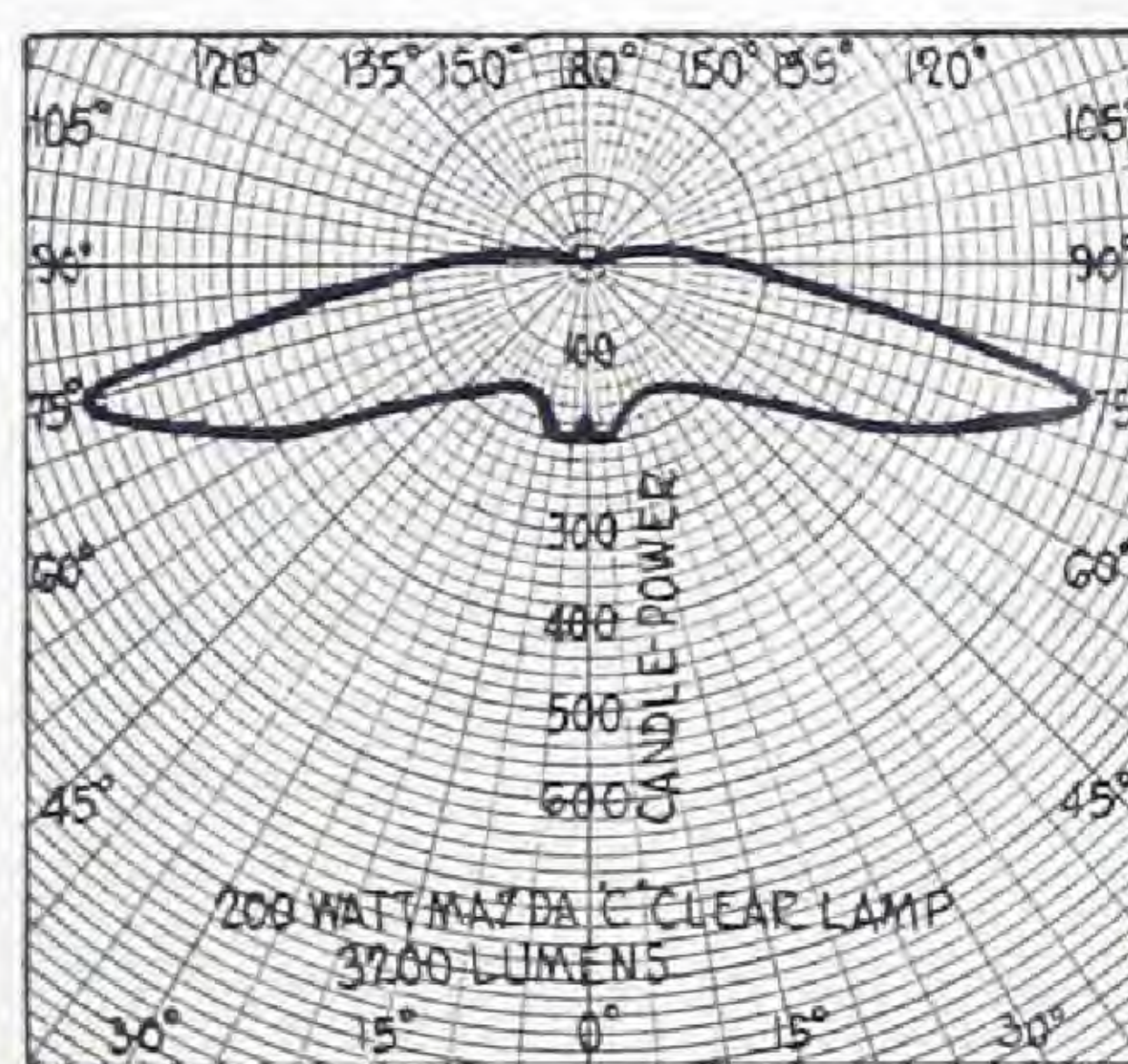
Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
830†	0891	.....	\$ 8.00	8	49	7 1/2"	9 7/8"	100†-150
		.....	4.50	8	22	7 1/2"	5 3/4"	
		4337	3.50	8	27	6 1/2"	5"	100†-150
832‡	0890	.....	10.50	8	58	8 1/2"	11 3/8"	200
		.....	5.50	8	18	8 1/2"	6 1/4"	
		4334	5.00	8	40	7 1/2"	6 1/4"	200



Bracket No. 0875



Bracket No. 0865



Characteristic Curve
200 watt Lamp



Bracket No. 0866

833	.....	.....	\$10.50	8	62	8 3/4"	9 1/4"	200
	0897	.....	5.50	8	22	8 3/4"	4"	
		4334	5.00	8	40	7 1/2"	6 1/4"	200
834	.....	.....	7.00	8	47	7 3/4"	7"	100
	0904	.....	3.50	8	20	7 3/4"	2 3/4"	
		4337	3.50	8	27	6 1/2"	5"	100
835	.....	.....	7.00	8	50	7 3/4"	7 3/4"	150
	0905	.....	3.50	8	23	7 3/4"	3 3/4"	
		4337	3.50	8	27	6 1/2"	5"	150
0875 Bracket	.....	.....	5.80	8	35	16" Span		
0866 Bracket	.....	.....	5.75	4	35	12" Span		
0865 Bracket	.....	.....	3.60	4	13	8" Span		

† Use 1/8" socket extension with 100 watt lamp.

‡ These units are packed in individual cartons.

HOLOPHANE "WIDE-SPRED" SPECIFICS FOR OUTDOOR LIGHTING

These Holophane "Wide-Spred" specifics are heavy duty, outdoor, cast silicon aluminum fixtures and Holophane double refractor globes in symmetric and asymmetric distributions. The fixture is dust tight and terminates in 1½" female pipe thread connection.

All exposed glass surfaces are smooth and dirt resisting. Socket can be adjusted for different angles of maximum candle power.

Use:

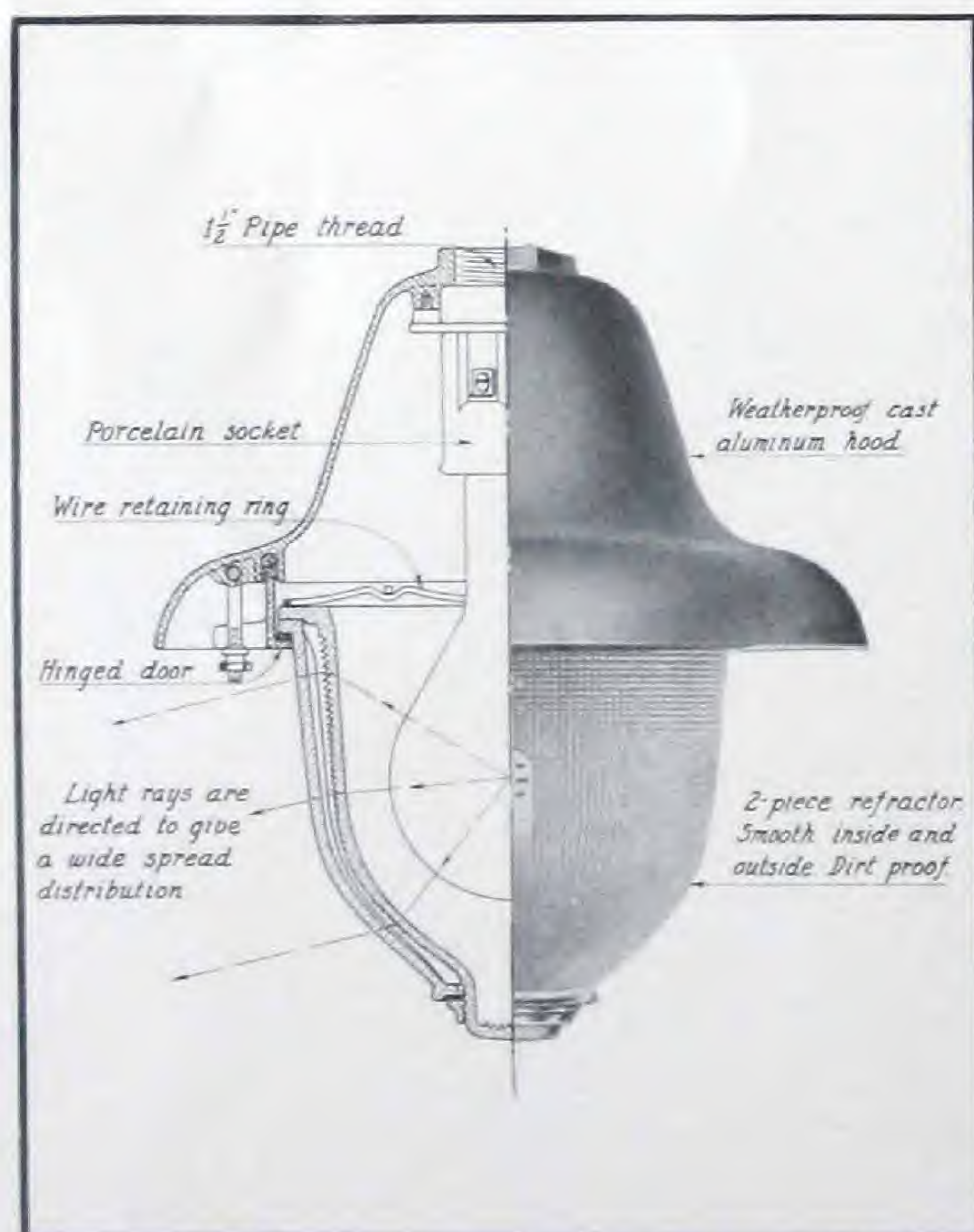
Nos. 04333-A and 04338-A (symmetric light distribution) for general outside illumination where the light is desired equally in all directions.

No. 04376-A (asymmetric light distribution) is useful where units are mounted between buildings and the light is desired in two directions only as in passageways and between buildings.

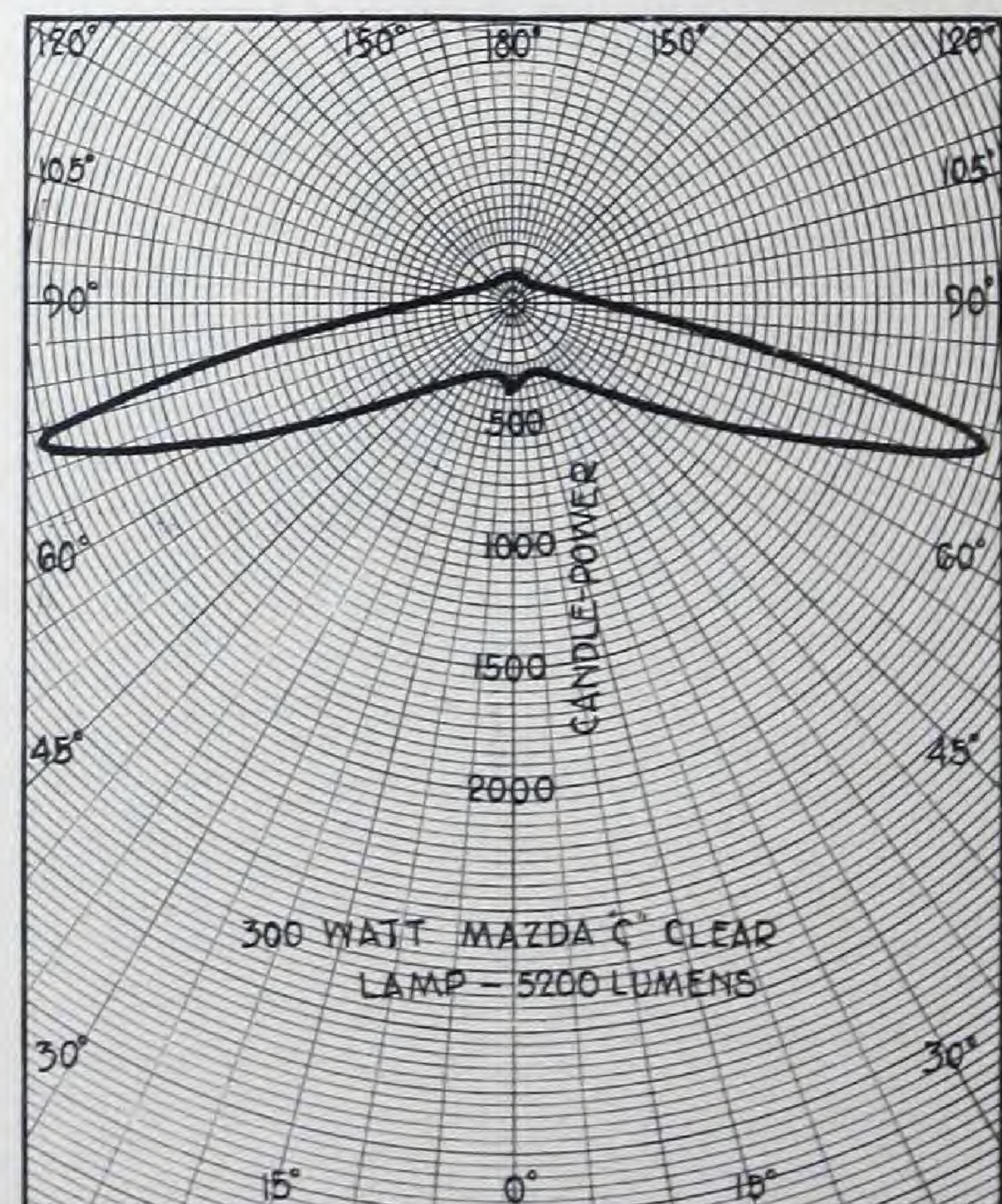
Nos. 04177-A and 04377-A (fan shaped light distribution) has special application where units are mounted on boundary of area to be lighted such as side of buildings, outdoor craneways, gas filling stations, parking spaces, etc.

No. 0878 bracket consists of a 4 inch diameter by 1¾" deep box and cast aluminum bracket 21 inches long with gasket between. The bracket terminates in a 1½" male pipe thread. The box is tapped for ¾" pipe. Four ⅜" bolts hold the box and bracket together and support it to the side of building or post. (These bolts are not furnished.)

No. 0867 bracket is made of cast iron and is finished either black or aluminum paint. The back plate is 10" in diameter and the span is 14 inches. The bracket terminates in a 1½" female pipe thread for connection to refractor by a short nipple.



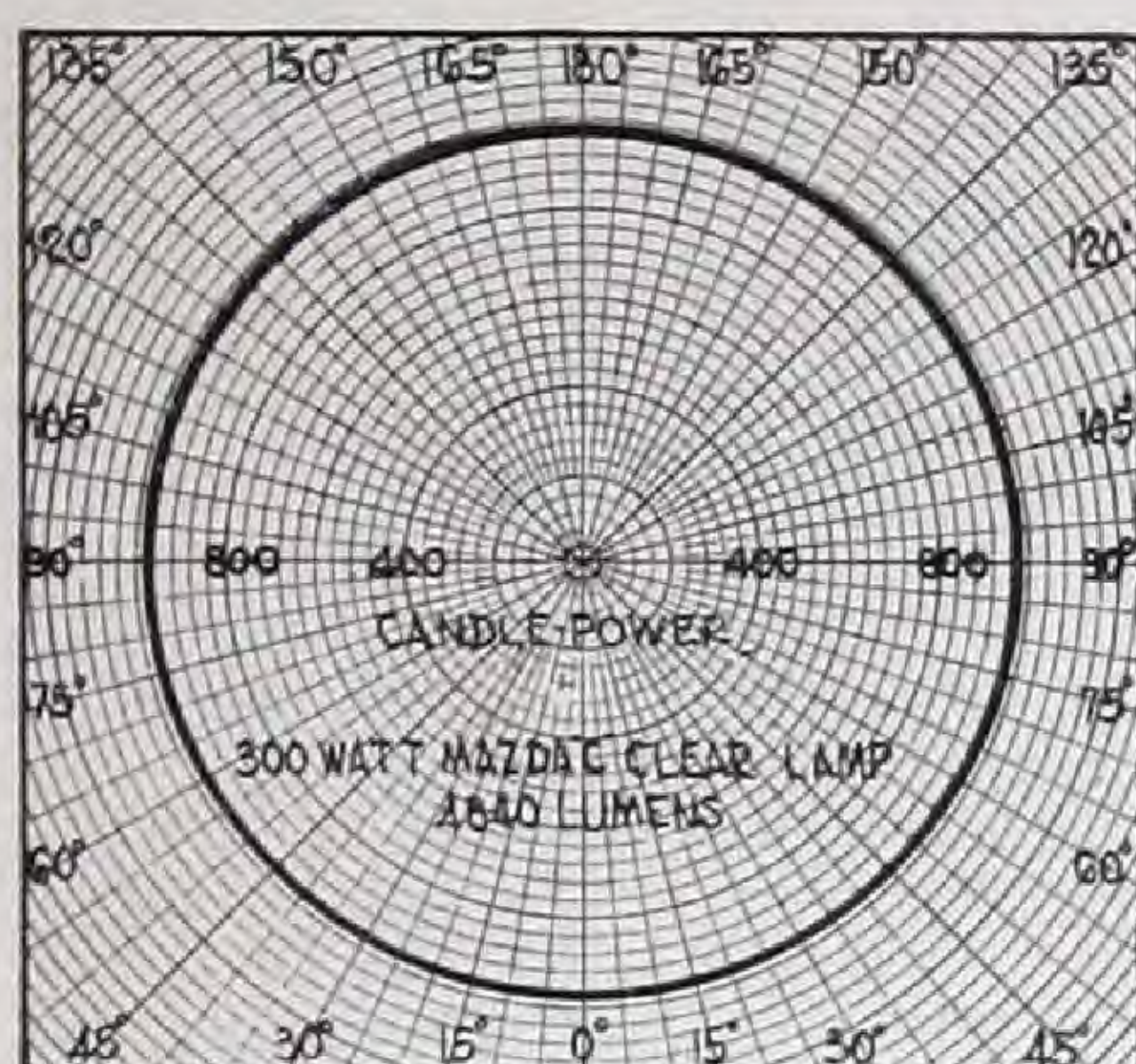
Showing construction and light control from
Holophane "Wide-Spred" Unit



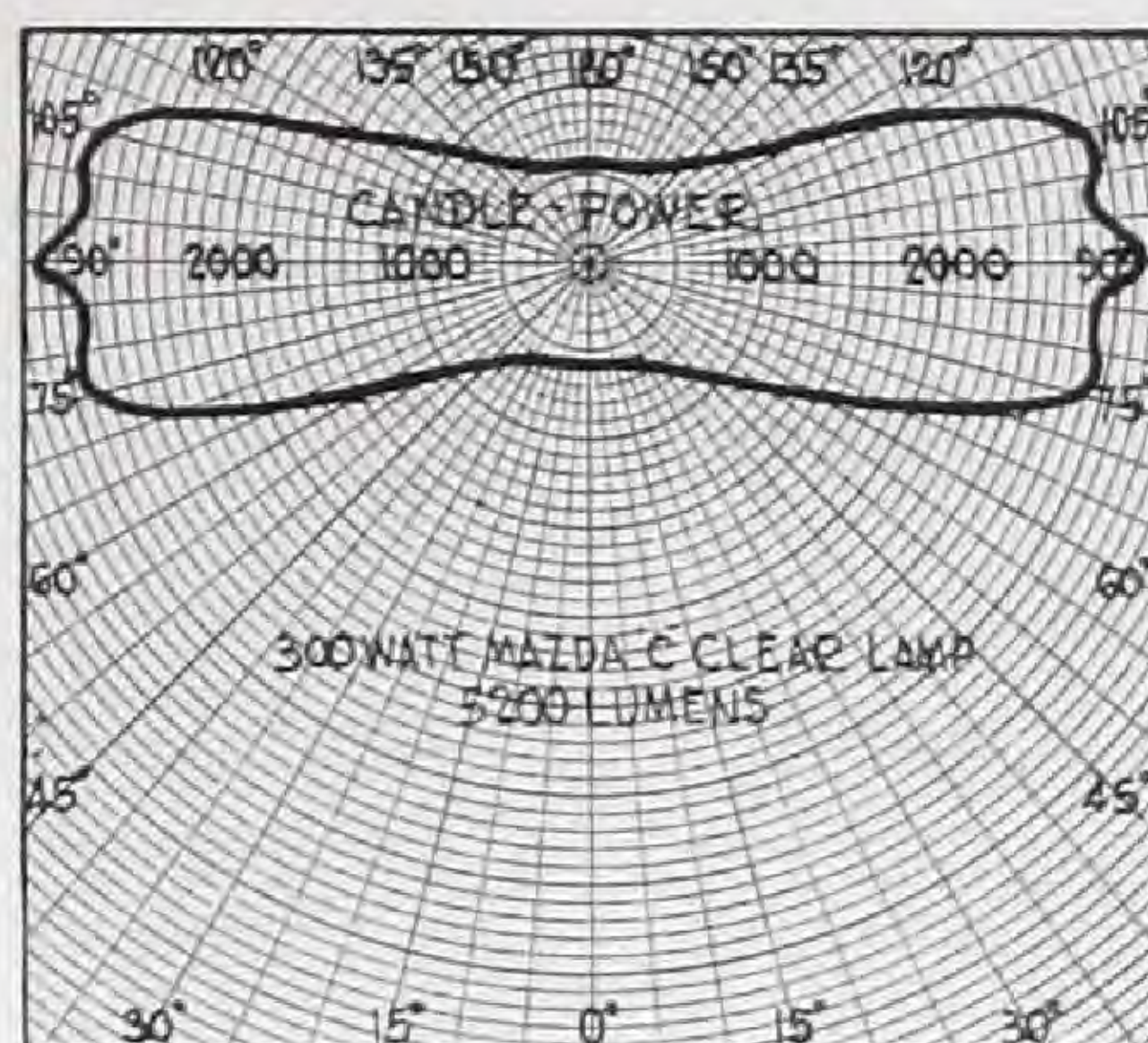
Characteristic Vertical Distribution Curve

HOLOPHANE "WIDE-SPRED" SPECIFICS FOR OUTDOOR LIGHTING

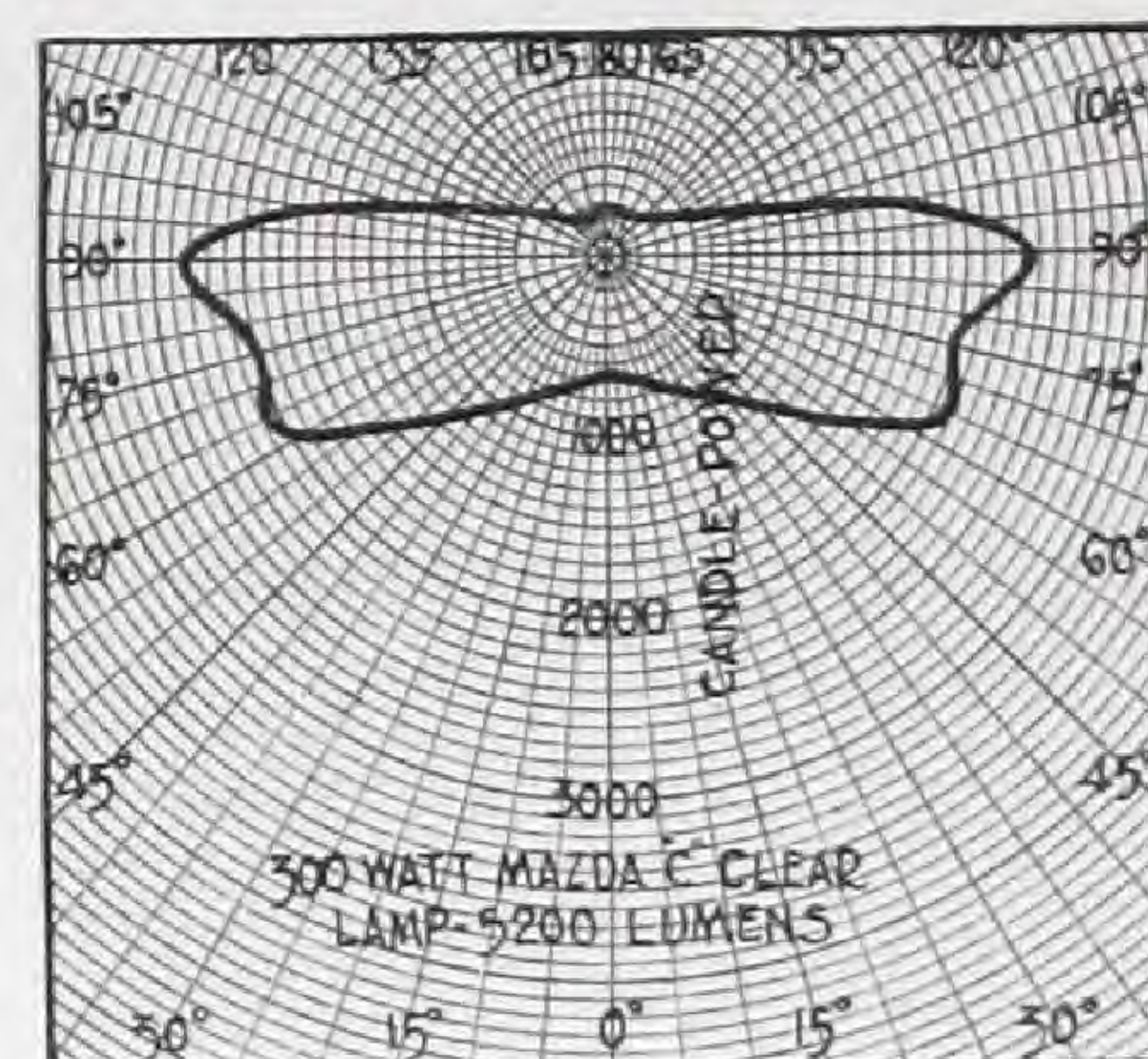
Typical Horizontal Distribution Curves of Symmetric and Asymmetric "Wide-Spread" Specifics



Characteristic horizontal distribution curve of 04338-A and 04333-A symmetric type



Characteristic horizontal distribution curve of 04376-A two way asymmetric type



Characteristic horizontal distribution curves of 04377-A and 04177-A fan shaped asymmetric type



Nos. 04338-A, 04376-A,
04377-A



No. 0878



No. 0867



Nos. 04333-A, 04177-A

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
04177-A†	..... 0882-A	.....	\$41.50	4	133	16 1/4"	17 1/4"	500
		.....	25.00	4	45	16 1/4"	7"	
		4177††	16.50	4	88	11 3/4"	11"	500
04333-A	..... 0882-A	.....	39.00	4	165	16 1/4"	16 1/4"	500
		.....	25.00	4	45	16 1/4"	7"	
		4333	14.00	4	120	11 3/4"	10"	500
04338-A	..... 0881-A	.....	24.80	4	68	12 7/8"	14 3/8"	200**-300
		.....	16.80	4	33	12 7/8"	7 1/4"	
		4338	8.00	4	35	8 1/2"	7 7/8"	200**-300
04376-A*	..... 0881-A	.....	25.80	4	69	12 7/8"	14 3/8"	200**-300
		.....	16.80	4	33	12 7/8"	7 1/4"	
		4376*	9.00	4	36	8 1/2"	7 7/8"	200**-300
04377-A†	..... 0881-A	.....	26.80	4	69	12 7/8"	14 3/8"	200**-300
		.....	16.80	4	33	12 7/8"	7 1/4"	
		4377†	10.00	4	36	8 1/2"	7 7/8"	200**-300
0867 Bracket	.....	.....	13.35	4	110	14" Span		
0878 Bracket	.....	.....	12.60	4	15	24" Span		

* Two way distribution.

** Socket adapter required to change from mogul to medium base lamp.

NOTE:—These items are sold for Industrial Lighting only. Write for information on Street Lighting applications.

† These units are packed in individual cartons.

†† Fan shaped distribution.

HOLOPHANE SPECIFICS FOR OUTDOOR SUB-STATIONS

These specifics have been scientifically designed for the lighting of outdoor sub-stations. They consist of a Holophane double globe refractor, used in inverted position over the lamp, enclosed in an outer protective globe to withstand weather conditions and mounted on a cast silicon aluminum fixture body, terminating at the base in a 1½" female pipe threaded connection. The fixture body holds a prismatic diffusing element designed to distribute the downward light, that is otherwise trapped in the fixture body, toward the ground so that the ground light is greatly increased over the old construction without subtracting from the upward light. The refractors are supplied as listed below for symmetric and asymmetric distribution, depending upon the location, and in either type of distribution deliver the maximum beam of light at low angles above the horizontal. These units are usually mounted about 8 feet from the ground, where lamp renewals can be made quickly and without danger. The main light delivered is on the under side of the super-structure, the important surface to be well lighted. The maximum light is delivered from

such an angle that anyone working under the equipment at night will not be subjected to glare or eye-strain. Write for special bulletin on lighting of outdoor sub-stations. An improved construction enables the refractor to be cooled by convection. 300-watt lamps can be used without resorting to outside ventilation and consequent dust depreciation.



Nos. 043384, 043774
(Symmetrical) (Asymmetrical)



No. 0878
Bracket for mounting
Nos. 043384, 043774

For horizontal curves see page 35, also invert the vertical curves on page 34 for the vertical distribution of these units.

This new unit has been designed to incorporate many practical improvements that have been recommended by consulting engineers and central station engineers **such as increased ground illumination and better heat dissipation.**

Use No. 0878 with any of the above units. Terminates in 1½" male pipe thread. Box tapped for ¾" pipe.

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture Only	Ground Light Diffuser	Refractor Only	Outer Globe Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
								Diameter	Depth	
043384	0873	\$39.90	4	82	15"	18½"	{ 200†- 300-
		7184	.....	.....	20.00	4	10	15"	8½"
		.....	.....	.....	4.00	4	*	11½"	3¾"
		4338	.....	.....	8.00	4	36	8½"	7⅞"
		.....	.....	1245	7.90	4	36	12¼"	11¼"
043774	0873	41.90	4	82	15"	18½"	{ 200†- 300-
		7184	.....	.....	20.00	4	10	15"	8½"
		.....	.....	.....	4.00	4	*	11½"	3¾"
		4377	.....	.....	10.00	4	36	8½"	7⅞"
		.....	.....	1245	7.90	4	36	12¼"	11¼"
0878 Bracket		12.60	4	15	24" Span		

† With 200-watt lamp use Mogul to Medium Base Adapter.

* Fixture and glass will be packed together in a carton.

HOLOPHANE SPECIFICS FOR HOSPITALS

Hospital Lighting

The Holophane Company has been a leader in studying the conditions and devising suitable lighting equipment and methods. A careful analysis of the lighting requirements of hospitals of the most modern type, with the special need for economy in mind that is usually a most important consideration, has led to the development of the lighting specifics listed in the schedule below and shown in this Datalog.



Typical Hospital Lighting Schedule

LOCATION	FOOT-CANDLES HORI- ZONTAL	VERTI- CAL	RECOMMENDED LIGHTING UNIT	PAGE	LOCATION	FOOT-CANDLES HORI- ZONTAL	VERTI- CAL	RECOMMENDED LIGHTING UNIT	PAGE
Ambulance Ent.	1.0		830-832	33	Offices	20.0		R-r*	16-17
Barber Shop	20.0		Filterlite	18-19				Filterlite	18-19
Battery Room	5.0		02328	29	Operating Rms.				
Bact'logical Rm.	20.0	5.0	R-r*	16-17	(a) Major	1000	250	Nos. 15, 18, 21 M.C.L.S.	40
Blackboards		60.0	H-790-2	51	(b) Obstetrical		to		
Chart Rms.		10.0	02176	21	(c) Septic		750		
Class Rooms	20.0		Filterlite	18-19	(d) Minor	300	100	No. 5 M.S.L.S.	41-43
Coat Rooms	3.0		C-CSI	53-54	(e) Emergency	300	100	No. 5 M.S.L.S.	41-43
Corridors	3.0		Filterlite	18-19	(f) Delivery	200	300	No. 5 M.S.L.S.	41-43
Corridors—Night Light in Wall			W-792	50	Plate Room	5.0		R-r*	16-17
Cystoscopic Rms.	20.0	5.0	R-r*	16-17	Radio Room	10.0		R-r*	16-17
Dental Surgery	200.0		3 D.S.L.S.	41-43	Rest Rooms	5.0		Filterlite	18-19
Diagnostic Rms.	20.0		Filterlite	18-19	Service Rooms	10.0		R-r*	16-17
Elec. Equip. Space	5.0		6541	26-27	Sewing Rooms	20.0		R-r*	16-17
Examining Rms.	{ 10.0 general 150.0 local		742	38	Staff Rooms	10.0		Filterlite	18-19
Fracture Room	{ 10.0 general 150.0 local		742	38	Sterilizing Rms.	10.0		R-r*	16-17
Garage	5.0		02328	29	Telephone Space	5.0		R-r*	16-17
Instrument Rm.	10.0		Filterlite	18-19	Therapy	10.0		Filterlite	18-19
Kitchens	10.0		R-r*	16-17	Toilets	5.0		C-CSI	53-54
Labor Rms.	2.0		Twilite	39	Utility Rooms	10.0		R-r*	16-17
Laundry	10.0		R-r*	16-17	Wards				
Library	20.0		Filterlite	18-19	(a) Private	3.0	}	Twilite & Wall Light	39 & 50
Linen Room	5.0		R-r*	16-17	(b) Semi-Private	3.0			
Lockers	5.0		02176	21	(c) Public	3.0			
Nurseries—Night Light in Wall			W-792	50	Night Light in Wall			W-792	50
					(d) Psychiatric			A-755-HF-729	42
					Yard Space	0.25		No. 830-832	33-35

* R-r means Reflector-Refractor.

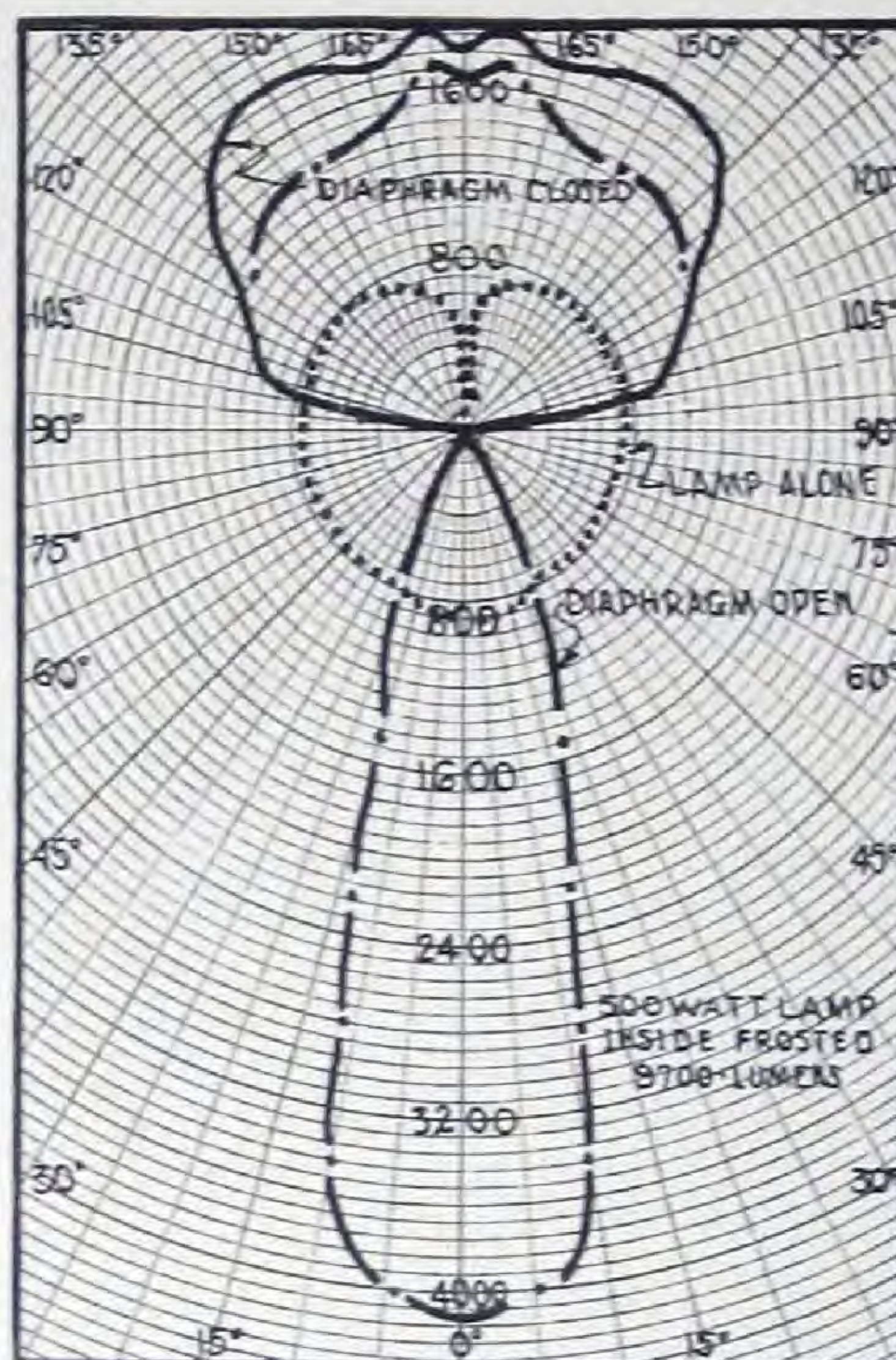
HOLOPHANE SPECIFIC FOR MEDICAL EXAMINATION

The New Holophane Medical Examination Unit

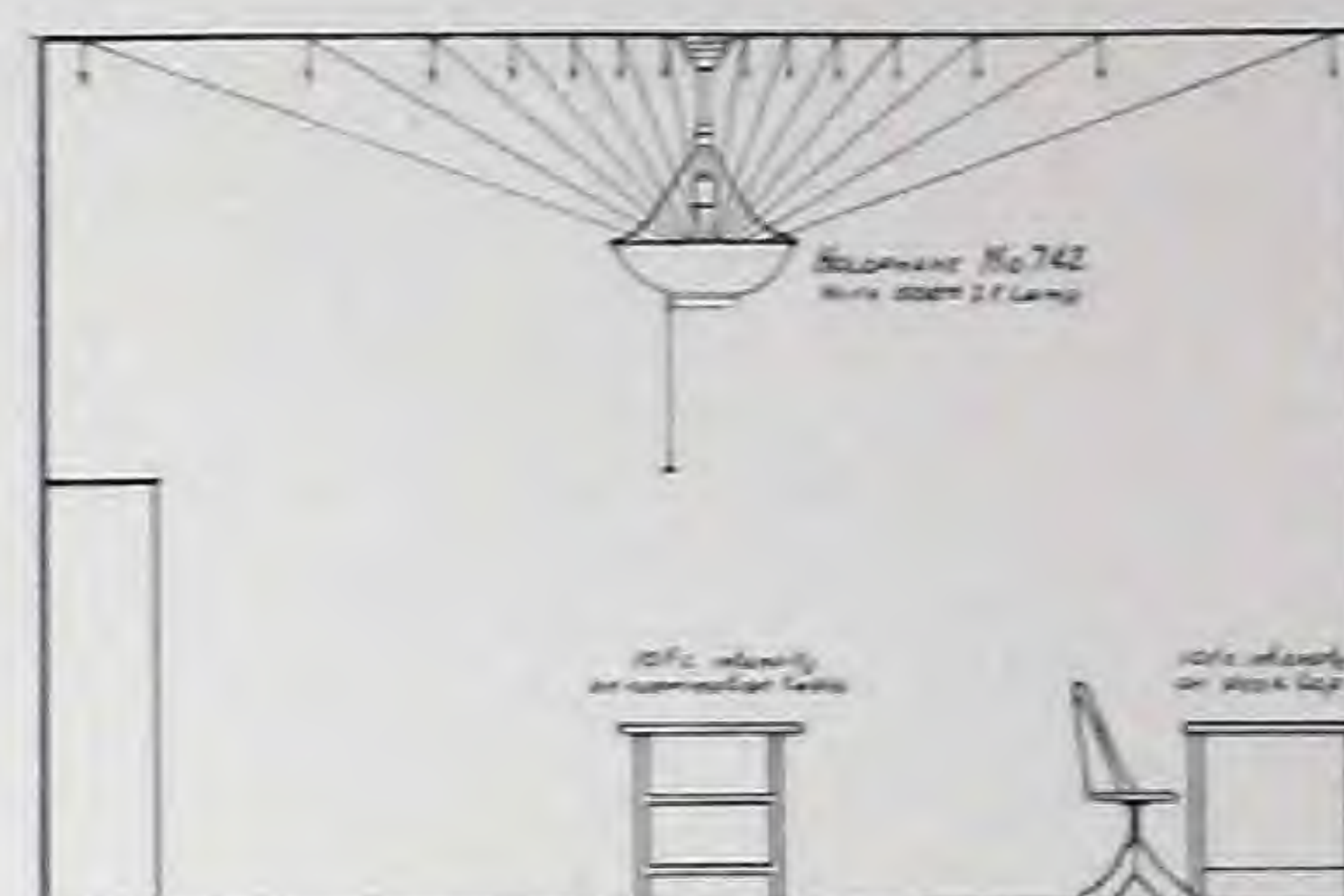
provides the two requisites for ideal examination office lighting; adequate general illumination for routine work, a powerful beam of concentrated light for examination purposes—both from a single unit.



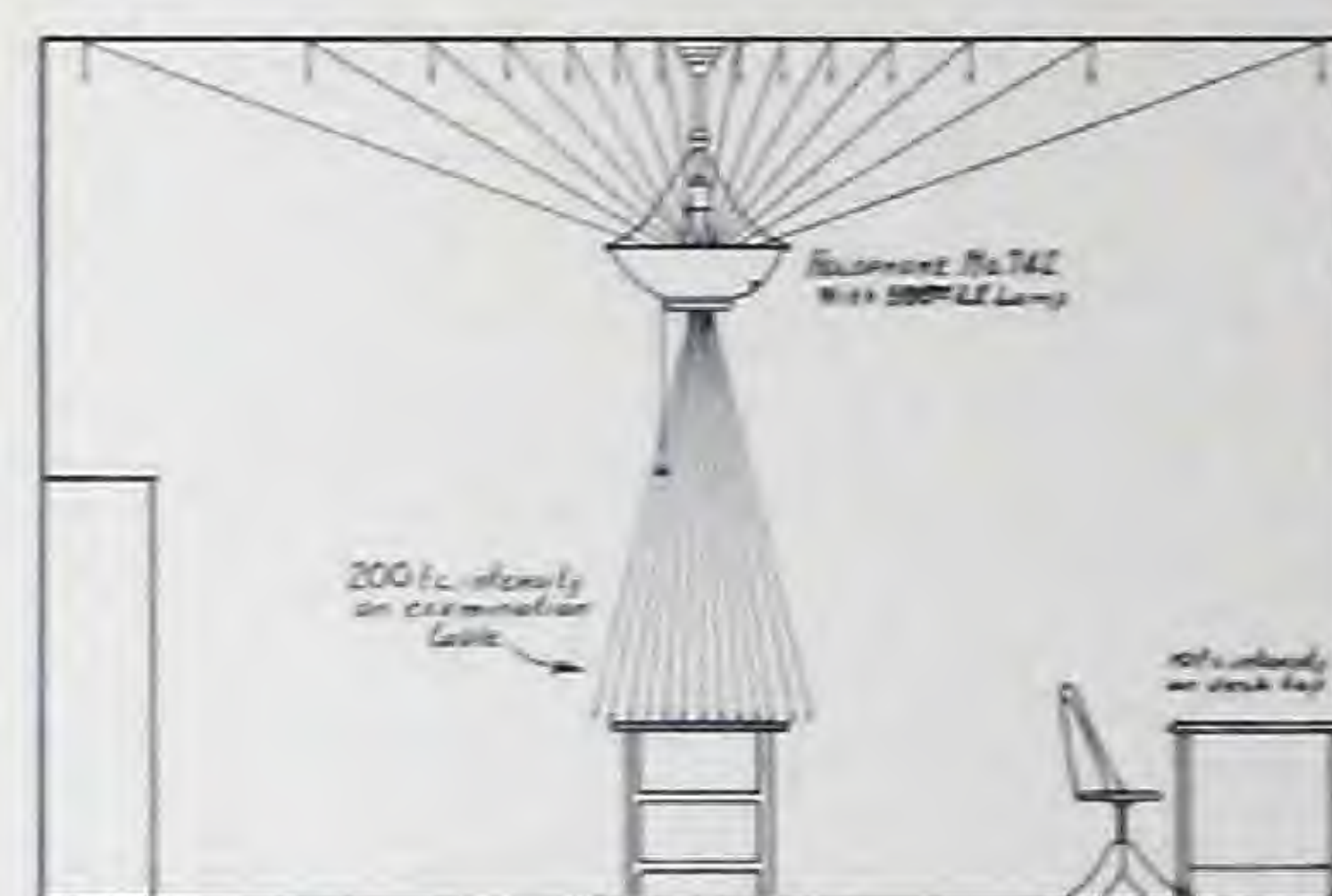
No. 742



Characteristic Curves



General Illumination—
Diaphragm Closed



Examination Use—
Diaphragm Open

No. 742 is composed optically of two distinctly different elements. One element is a white porcelain enamel Reflector bowl for indirect lighting; the other a concentrating prismatic Controlens to give a strong downward component of light. The amount of downward light can be varied from 0 to 4000 candlepower by turning a Bakelite knob suspended at the bottom of the unit which opens a diaphragm covering the Controlens.

The optical elements are supported by a tripod holder to a plain stem with canopy. This method of support makes for easy maintenance as the bowl can readily be removed. A mogul base socket is supplied. The canopy has a knockout for an H & H No. 7745-Z switch. The bowl is finished in white porcelain while the tripod, stem and canopy are finished in white Duco to match the bowl. The fixture is furnished NOT WIRED and without inside frosted lamp.

The Medical Examination Unit is a clinical appurtenance of impressive appearance and dual use. It assures the Doctor adequate general illumination at all times and also provides examination light without the inconvenience generally experienced by the use of accessory lighting equipment for this function.

This type of lighting is also suitable for first aid rooms in schools, colleges, arenas, industrial plants, sport fields, etc. . . . Rubbing rooms in gymnasiums, turkish baths, etc. . . . Small display rooms . . . Examination rooms in clinics, colleges, army posts, C.C.C. Camps, naval stations, recruiting offices, etc. . . . Morticians' embalming rooms . . . For taxidermists in museums . . . For factory superintendents' offices and for various industrial inspection operations.

SCHEDULE "R" DISCOUNTS

Complete Unit	List Price	Std. Quantity	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
				Diameter	Depth	
742†	\$24.00	6	140	21 1/4"	36"	500 W-I-F

† Packed in individual cartons.

HOLOPHANE SPECIFICS FOR HOSPITAL ROOMS AND WARDS

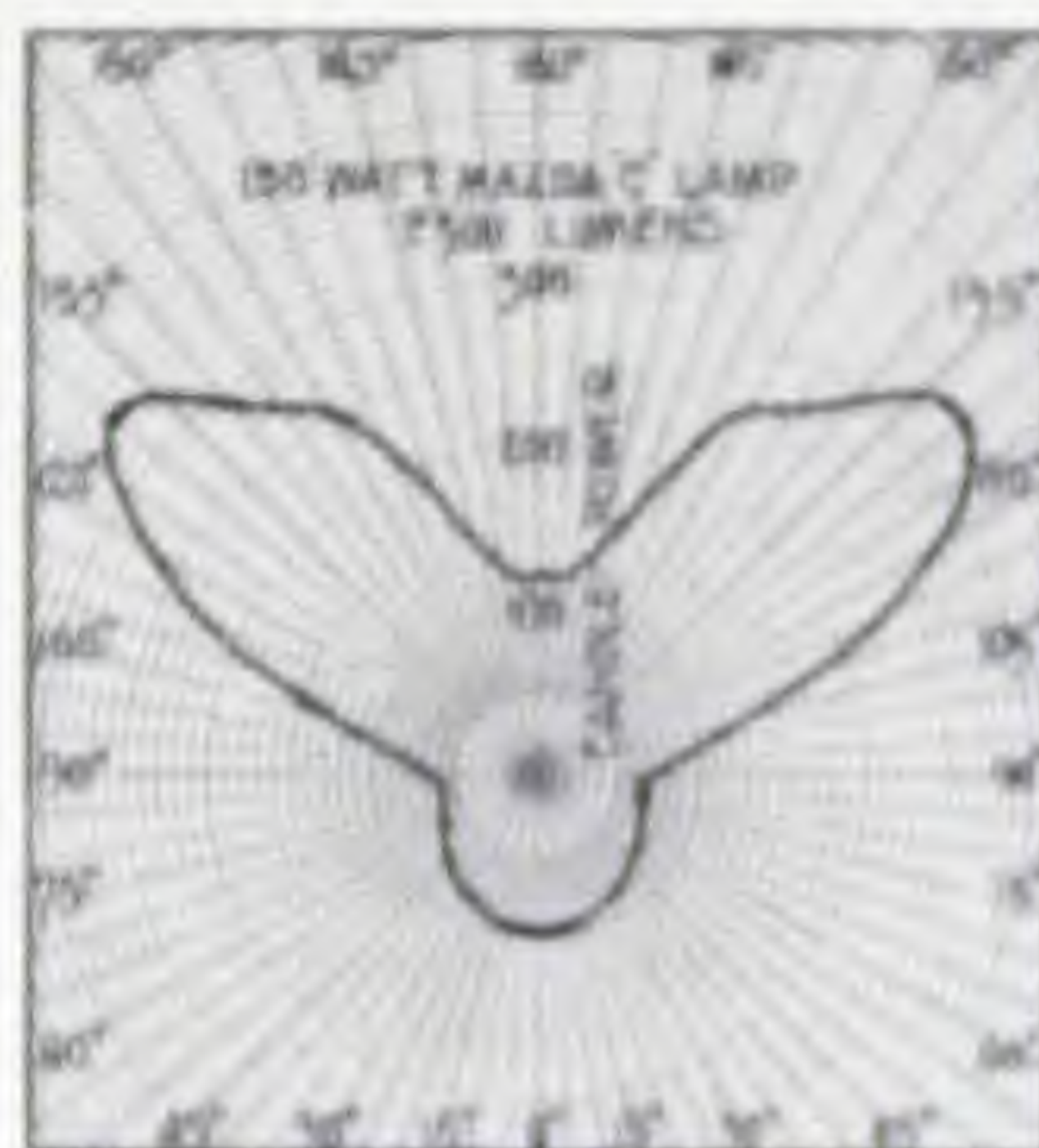
For all locations where patients are housed an ideal lighting unit is one producing a semi-indirect light distribution with extremely low brightness assuring maximum visual comfort.

Holophane "Twilites" provide two levels of semi-indirect illumination, one for reading or medical examination and the other for night lighting. Nos. C-7326-R and S-7326-R are respectively ceiling and suspension type with one central socket for 100 watt lamp and one auxiliary or night light socket for 3 or 5 watt lamp on a separate circuit. Nos. C-7346-R and S-7346-R are respectively ceiling and suspension type for 100 or 150 watt central light and two auxiliary or night light sockets for 3 or 5 watt lamps on a separate circuit. Fixtures and glass are stream line design to resist dust and dirt accumulation.

Fixtures are No. 22 gauge brass. Ceiling type fixtures are provided with canopy cross bar and barrel nuts for mounting. Suspension fixtures are of rigid stem, ball and swivel construction with drop canopy and terminate in a $\frac{3}{8}$ " female hick-ey for direct attachment to outlet box stud. Wire is furnished but fixtures are **not** wired. Standard finish is Hospital gray Duco. Other finishes quoted on request. Pull chain canopy switch can be furnished at \$1.50 list extra.



No. S-7326-R, S-7346-R



Characteristic Curve



No. C-7326-R, C-7346-R

SCHEDULE "R" DISCOUNTS

Complete Unit	Fixture No.	Glass No.	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions		Mazda Lamp
						Diameter	Depth	
C-7326-R	0503	.....	\$17.50	5	90	12"	14 $\frac{1}{4}$ "	1-100 watt
		.....	8.50	5	20	5 $\frac{1}{8}$ "	4 $\frac{1}{8}$ "	1-3 or 5 watt lamps
		7326**†	9.00	5	70	12"	11 $\frac{1}{4}$ "	1-100 watt 1-3 or 5 watt lamps
S-7326-R	0484	.....	20.00	5	95	12"	33 $\frac{1}{4}$ "	1-100 watt
		.....	11.00	5	25	4 $\frac{1}{8}$ "	22 $\frac{1}{4}$ "	1-3 or 5 watt lamps
		7326**†	9.00	5	70	12"	11 $\frac{1}{4}$ "	1-100 watt 1-3 or 5 watt lamps
C-7346-R	0504	.....	24.00	4	100	14"	17 $\frac{1}{4}$ "	1-100† or 150
		.....	11.00	4	16	6 $\frac{1}{8}$ "	4 $\frac{1}{8}$ "	2-3 or 5 watt lamps
		7346**†	13.00	4	84	14"	13 $\frac{1}{2}$ "	1-100† or 150 2-3 or 5 watt lamps
S-7346-R	0485	.....	28.00	4	105	14"	35 $\frac{1}{4}$ "	1-100† or 150
		.....	15.00	4	21	5 $\frac{1}{8}$ "	22 $\frac{1}{4}$ "	2-3 or 5 watt lamps
		7346**†	13.00	4	84	14"	13 $\frac{1}{2}$ "	1-100† or 150 2-3 or 5 watt lamps

† Use $\frac{1}{8}$ " socket extension with 100 watt lamp.

* Can be supplied with opaque liner at \$1.00 list additional.

** Can be supplied with opaque liner at \$1.25 list additional.

† These units are packed in individual cartons.

HOLOPHANE SPECIFIC FOR MAJOR SURGERIES

MULTIPLE CONTROL LENS SYSTEMS FOR OPERATING ROOMS

(Write for Special "Hospital Lighting" Bulletin)

A multiple lens system for surgery lighting provides a number of light beams converging to form a high intensity spot on the operating area. It assures adequate light without glare, shadows or heat. It is a permanent part of the room construction and requires no adjustment or attention during an operation. It is well outside the zone of explosion hazard. Summing up, a Holophane Controlens System presents the most modern, complete, satisfactory method available for meeting the exacting lighting requirements and overcoming the mechanical difficulties of operating room lighting.



Illustration of Holophane No. 18M.C.L. System for Major Surgeries

ADVANTAGES:—

1. Horizontal illumination 1000 foot-candles average on operating area.
2. General illumination of the Operating Room so that the brightness of the surroundings is about the same as the interior of the incision. (The seeing conditions in "looking up" do not change).
3. The direction of the light may be varied without moving the fixture.
4. Adequate diffusion and absence of harmful shadows.
5. High vertical illumination.
6. Glareless, comfortable light.
7. Multiple lamping (some devices put only one lamp between life and death).
8. Reasonable cost of installation, operation and maintenance.
9. All enclosed and dirt-resisting.
10. No mirrors that permit conscious patients to observe their operation.

The M.C.L.S. is a self-contained unit consisting of all metal housing; top primed white inside, hospital gray Duco outside, sides and sash given one primary coat; complete with sockets, holders, reflectors, and lenses; wired in separate circuits collected in junction box ready for connection to power supply. It is shipped knocked down in such a way as to make assembly and erection easy. It is usually installed flush in a furred ceiling but may be mounted exposed if so desired. Metal strip for finishing ceiling around the unit is not part of the standard installation and is not included in prices given below.

SCHEDULE "T" DISCOUNTS

Unit No.	List Price Each	Standard Quantity	Weight Installed	Dimensions			Mazda Lamp*
				Length	Width	Depth	
15-M.C.L.S.	\$918.50	1	1000	11'-6 $\frac{1}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	15-150W.
18-M.C.L.S.	979.00	1	1150	13'-7 $\frac{3}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	18-150W.
21-M.C.L.S.	1,160.50	1	1300	15'-7 $\frac{7}{8}$ "	6'-6 $\frac{1}{2}$ "	1'-10 $\frac{1}{2}$ "	21-150W.

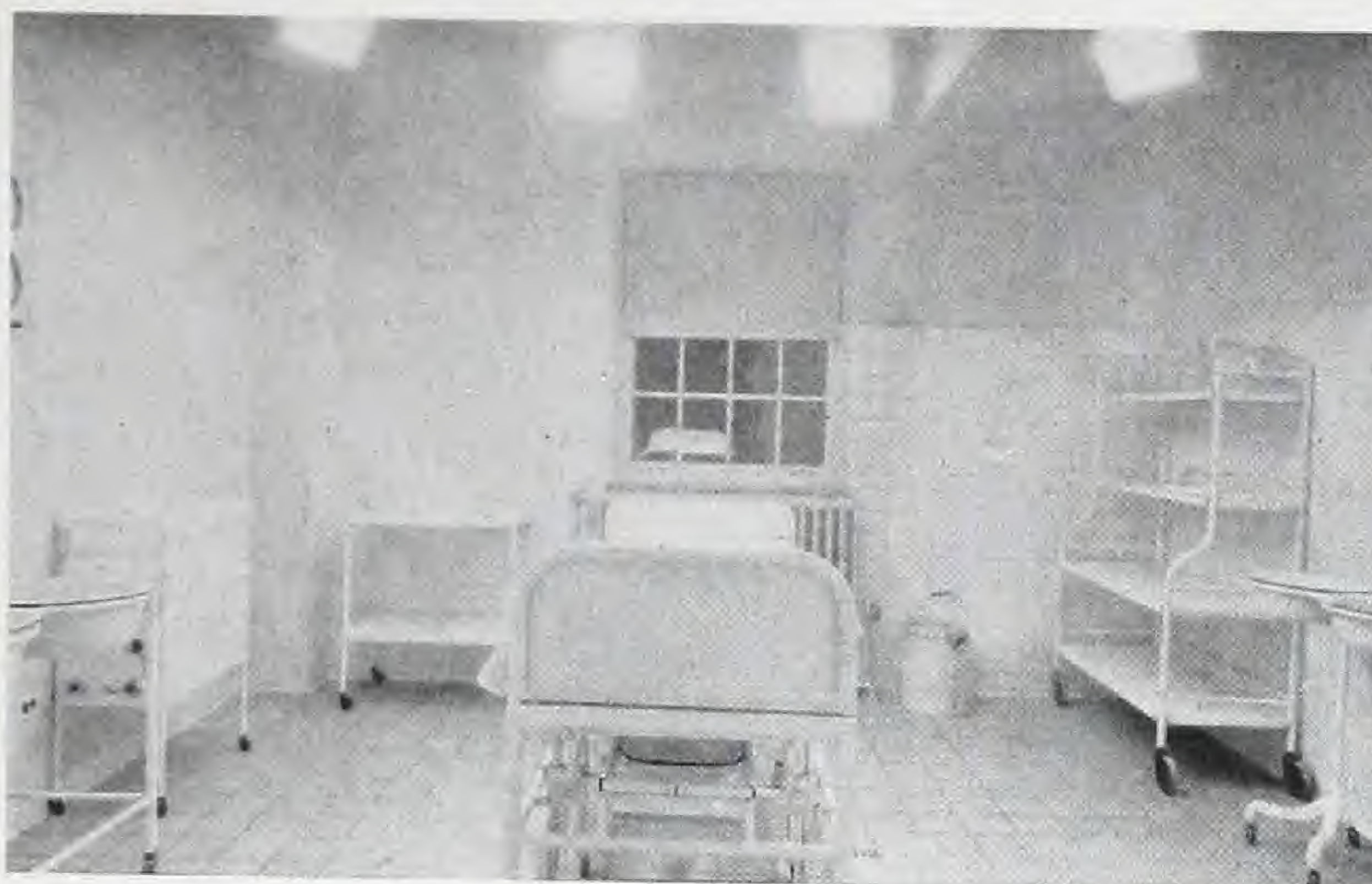
* 200 watt lamps may be used over the tilted end lenses if higher vertical illumination is desired, but this must be so stated when ordering so that the necessary changes in socket positions may be made.

IMPORTANT: When ordering state mounting height (distance from floor to bottom of sash).

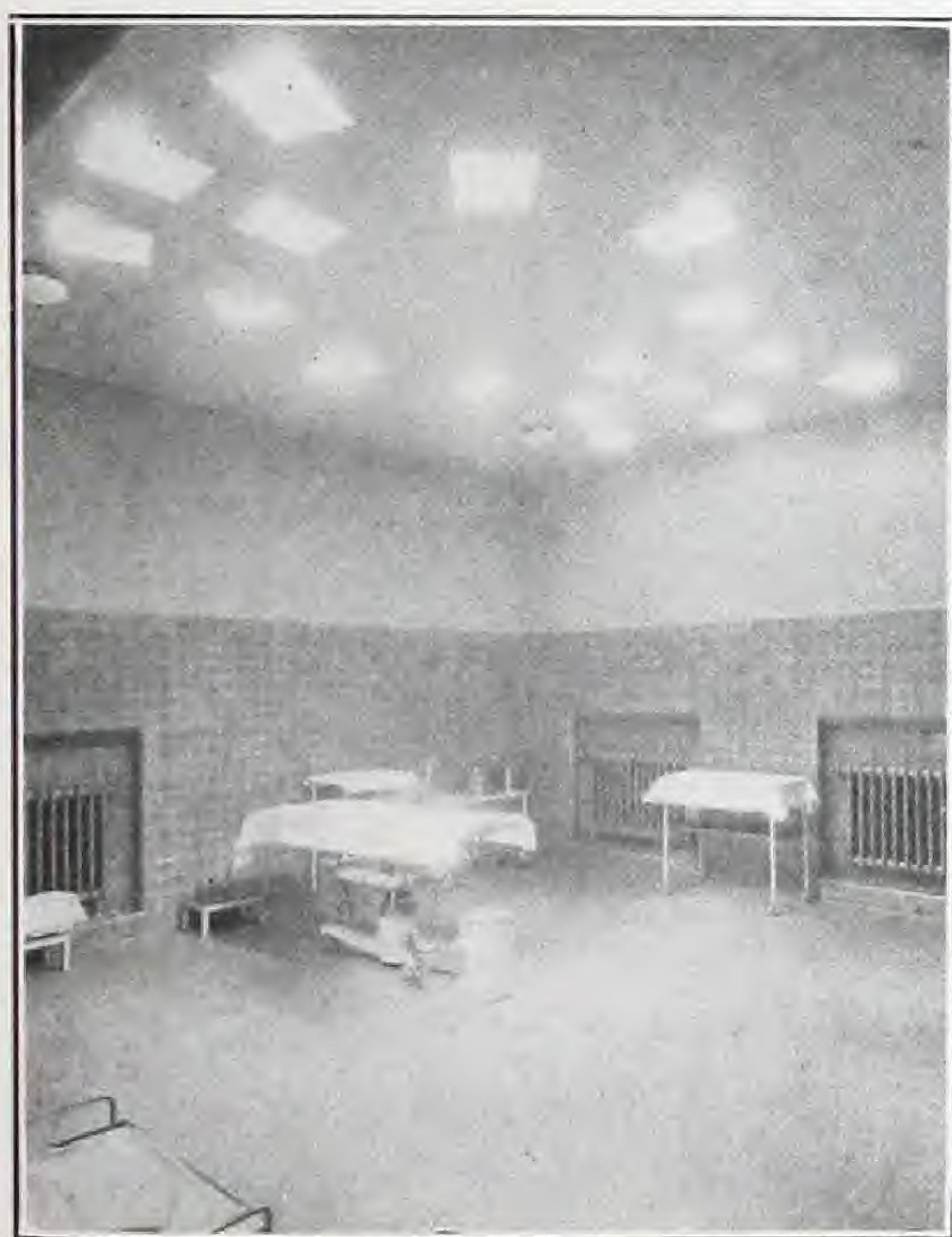
HOLOPHANE SPECIFICS FOR SURGERIES

The Holophane Multiple Spot Lens System is composed of a number of individual Controlens units for either exposed or recessed installation, arranged so that each contributes a beam of light to a spot at the operating site. The system embraces many of the desirable qualities of the M.C.L.S., viz.: absence of shadows, multiple lamping, heat elimination and adequate general room illumination.

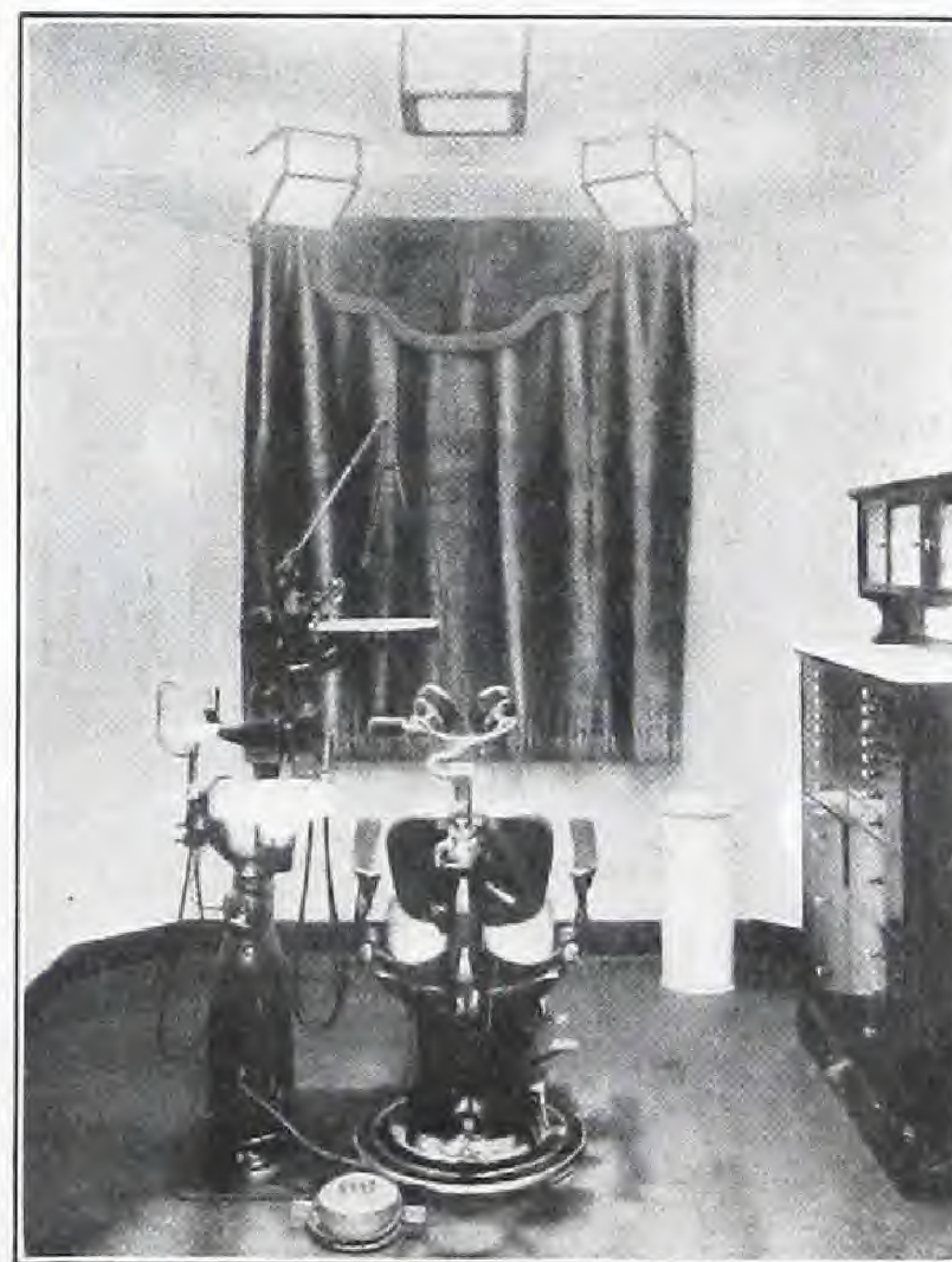
The size of the system ranges from 3 boxes, used for dental surgery (No. 3-D.S.L.S.), to whatever number is necessary to provide proper illumination for the type of surgical work performed.



No. 5 Multiple Spot Lens System for Delivery Rooms. Consists of 1 non-tilted and 4 tilted lens boxes for either flush or exposed mounting. The installation illustrated is an exposed system.



No. 16 Multiple Spot Lens System for operating, emergency, first aid and similar rooms. The installation illustrated is for special ophthalmic surgery and indicates the flexibility of this method of lighting. The system shown consists of 16 No. H-755-TF flush recessed units.



No. 3 Dental Surgery Lighting System consists of 1 non-tilted (No. D-729-L) and 2 tilted (No. D-729-T) lens boxes for exposed mounting. Write for "Dental Exposed" data sheet showing arrangement details.

SCHEDULE "I" DISCOUNTS

Complete Unit	List Price	Shipping Weight	Dimensions	Mazda Lamp†
No. 3 D.S.L.S. (Exposed)	\$72.50	45	Write for Engineering Data Sheets on Dental Exposed, Minor, and Delivery Multiple Spot Lens Systems.	3-150
No. 5 M.S.L.S. (Exposed)	120.50	66		5-150
No. 5 M.S.L.S. (Flush)	153.00	217		5-150 or 200†
No. 7 M.S.L.S. (Exposed)	168.50	85		7-150
No. 7 M.S.L.S. (Flush)	217.00	352		7-150 or 200†
No. 11 M.S.L.S. (Exposed)	264.50	130		11-150
No. 11 M.S.L.S. (Flush)	345.00	487		11-150 or 200†

† When 200 watt lamps are to be used, kindly advise when ordering.

HOLOPHANE PSYCHIATRIC AND JAIL CELL UNITS

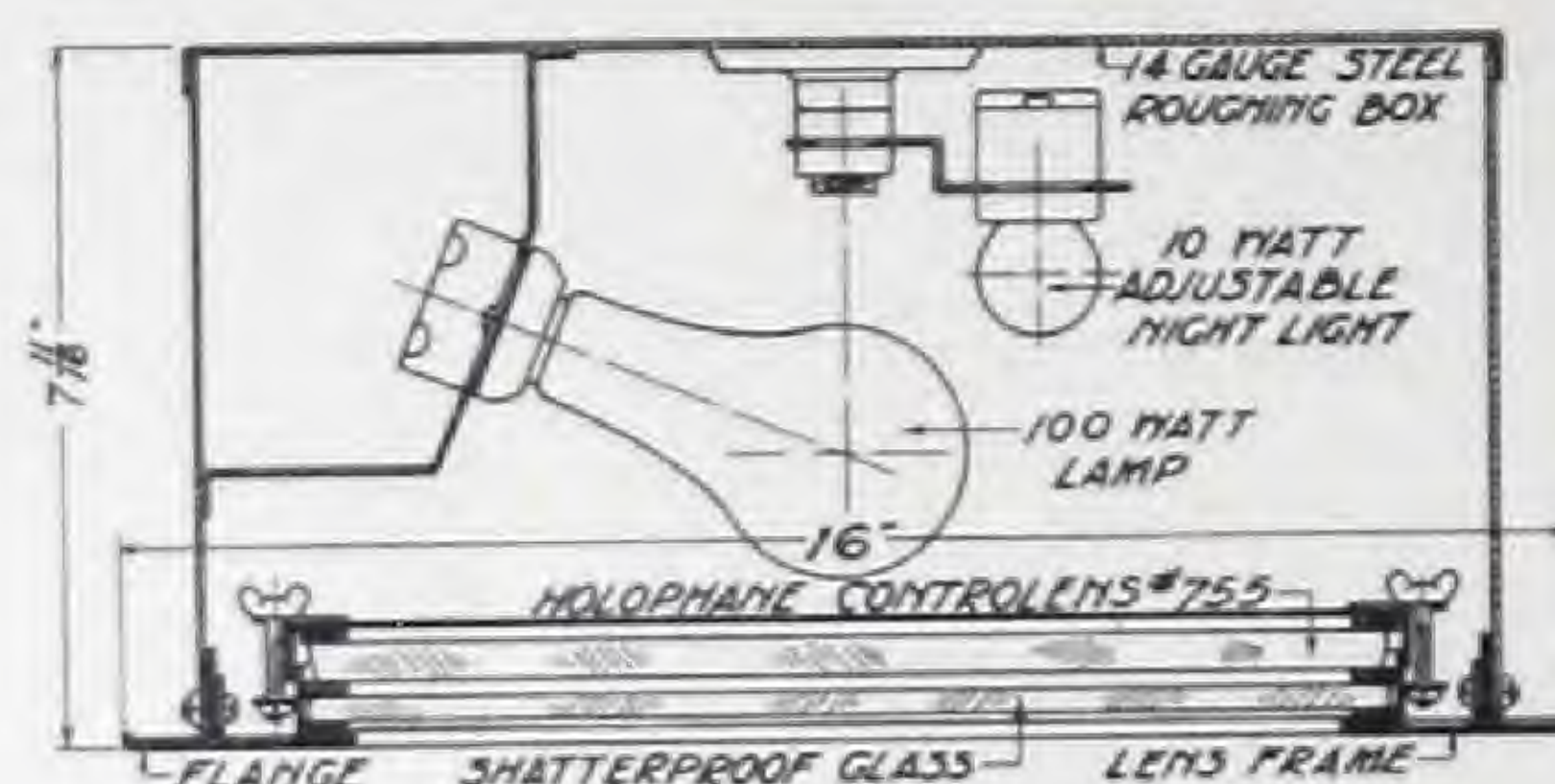
Holophane Psychiatric Units, Nos. A-755, HF-729 are for use in maximum and medium security locations respectively.

No. A-755 is of rugged "tool proof" construction. The front section holding the lens and shatter-proof glass is secured to the roughing box by four special safety screws. The exposed metal parts are statuary bronze finish.

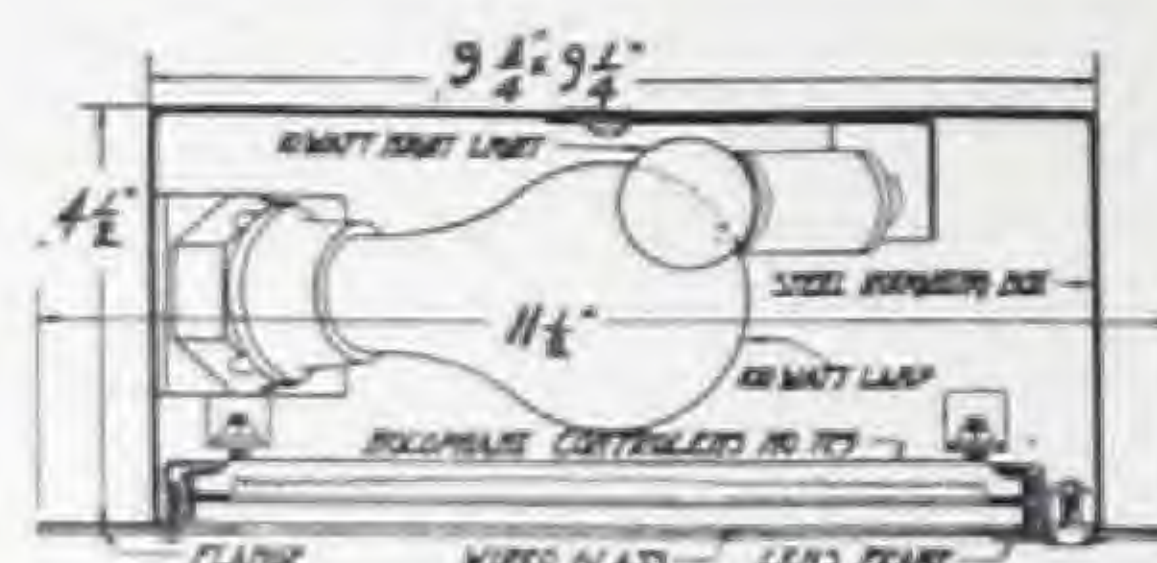
HF-729 is smaller and lighter in construction. The lens and protective wire glass are held in a hinged door in the front frame. A special catch guards against opening by unauthorized persons. Outside of unit is finished gray baked enamel prime coat. Both units have night light feature and are finished inside G.E. aluminum glyptal lacquer.



No. A-755



Sectional Detail of No. A-755

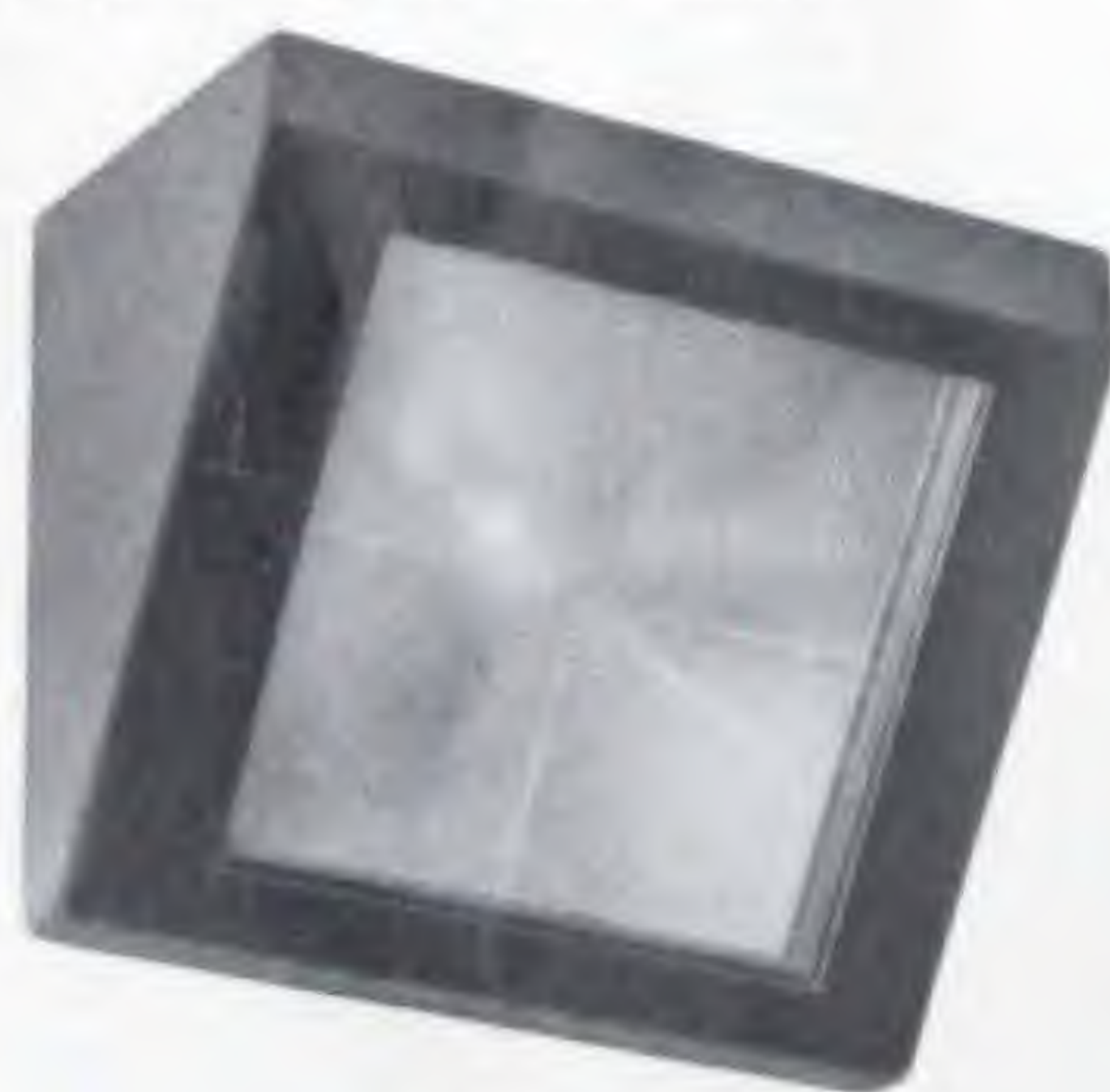


Sectional Detail of No. HF-729

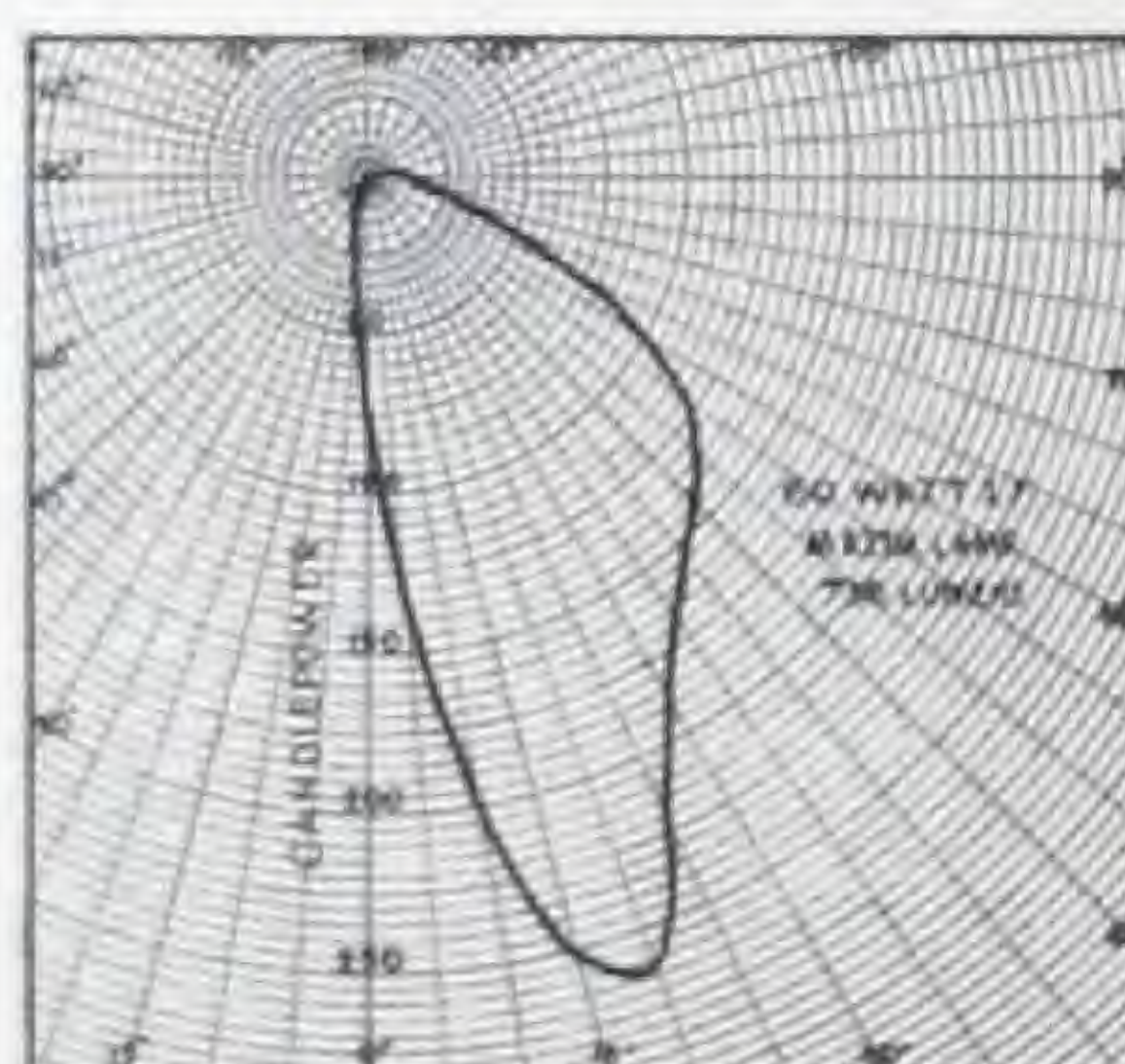


No. HF-729

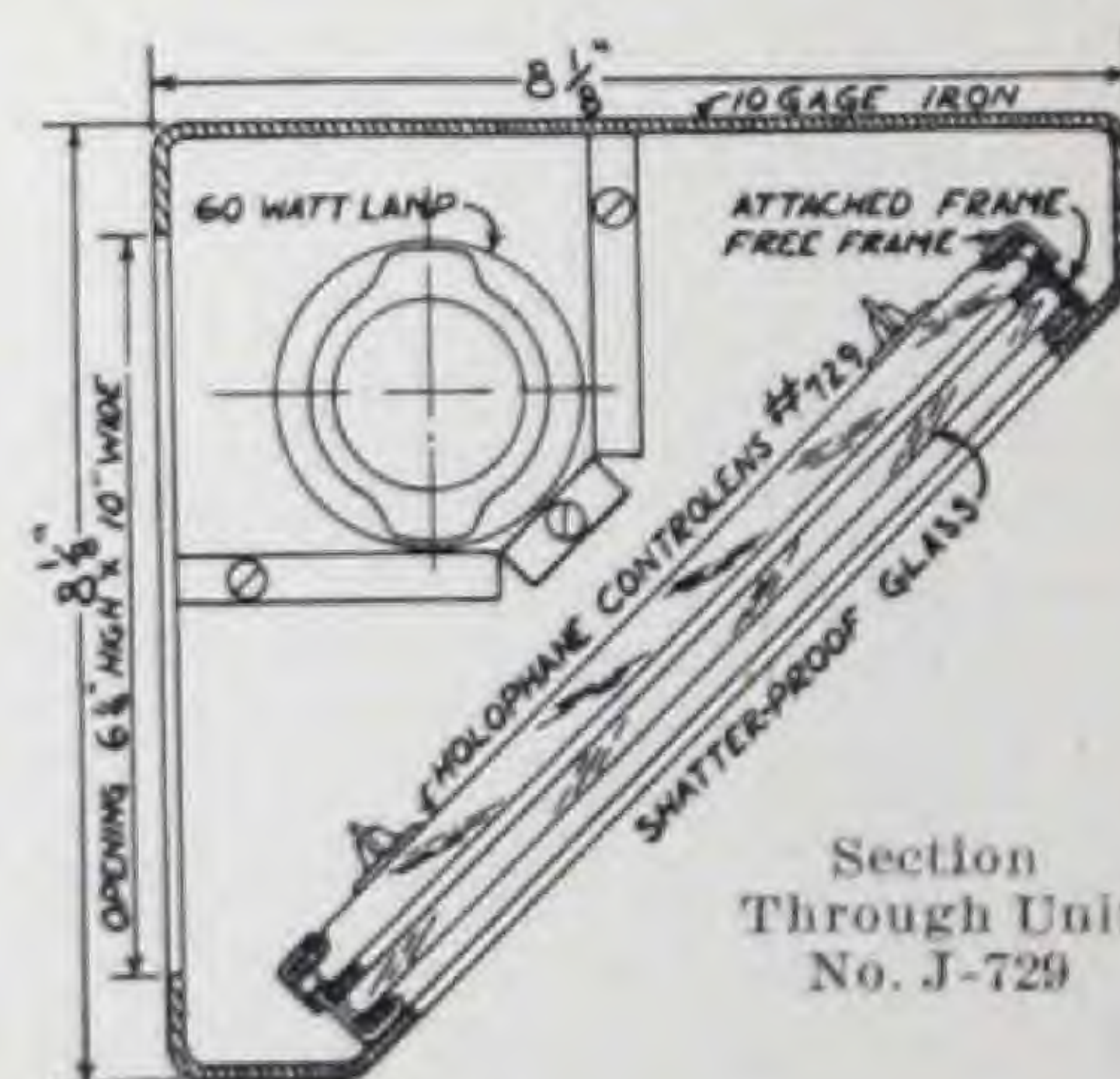
The Holophane Jail Unit No. J-729 employs a Holophane Controlens, mounted behind shatter-proof glass in a tool-proof housing. Lamp and reflector assembly is mounted on a strap fastened to the side of the housing. Provision for relamping is provided through the back of the unit.



No. J-729



Characteristic Distribution Curve No. J-729



SCHEDULE "T" DISCOUNTS

Complete Unit	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions*	Mazda Lamp
HF-729**	\$15.00	4	100	See Diagrams Above	1-100 watt and 1-10 watt
A-755	29.00	1	50		
J-729	17.00	4	46		60

** For omission of night light feature deduct \$.50 from list price; omission of protective glass deduct \$1.00 from list price. * Dimensions are approximate. Write for approved drawings if exact dimensions are required for installation.

HOLOPHANE CONTROLENS UNITS FOR GENERAL SERVICE

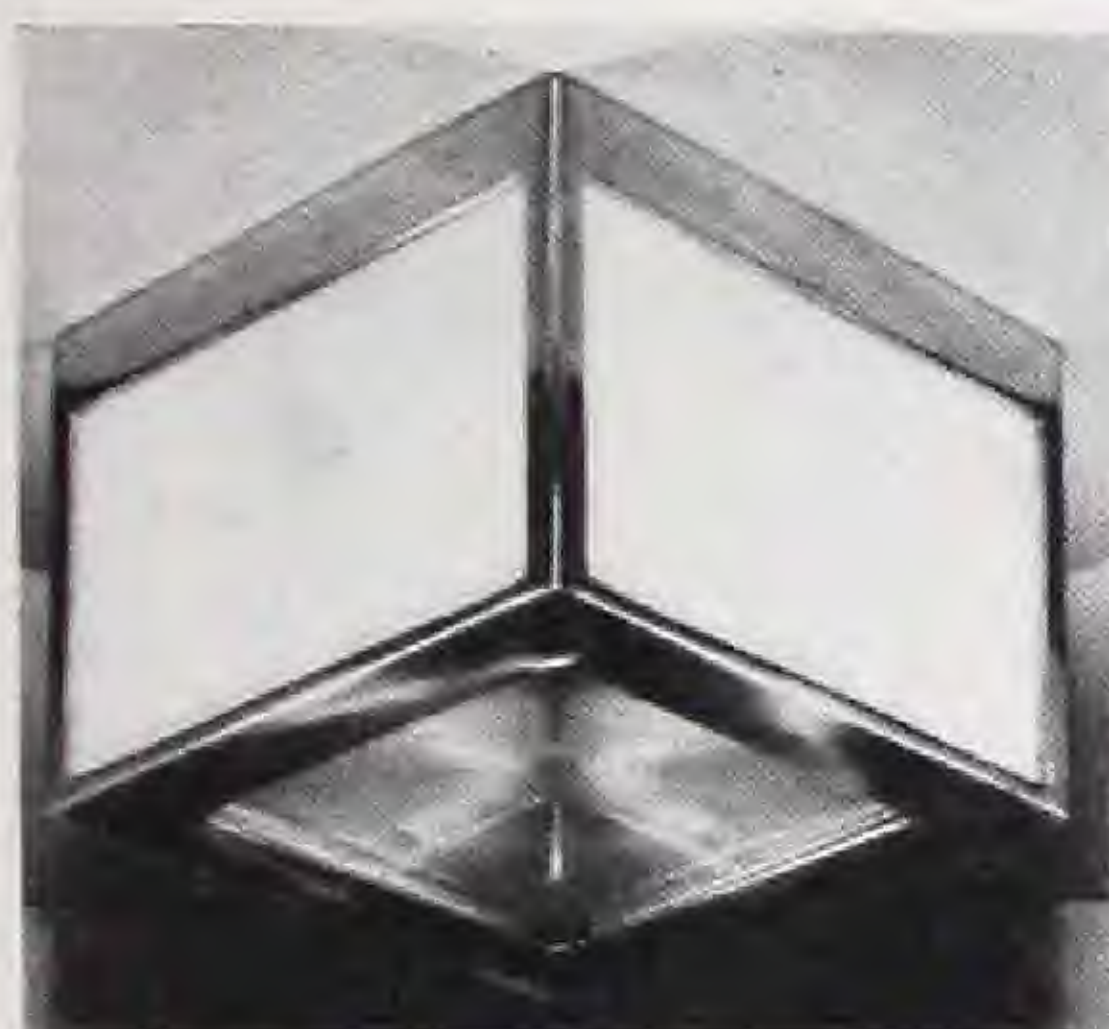
These units are used in combination to form the lighting systems for surgeries. Individually they have many uses in built-in lighting for exposed or recessed installation.

The H-755-TF and FL units for recessed installation are made up of a 16 gauge steel roughing box finished inside aluminum glyptal lacquer, outside grey baked enamel. The face carrying the lens is separate, of 12 gauge steel and is held to the box by 4 mounting screws. Finish, prime coat grey baked enamel. The Controlens slides into a steel pocket and is held by bronze clips. Door has two 1½" butt hinges and one thumb screw catch. Holophane Reflectors and proper holders complete the units.

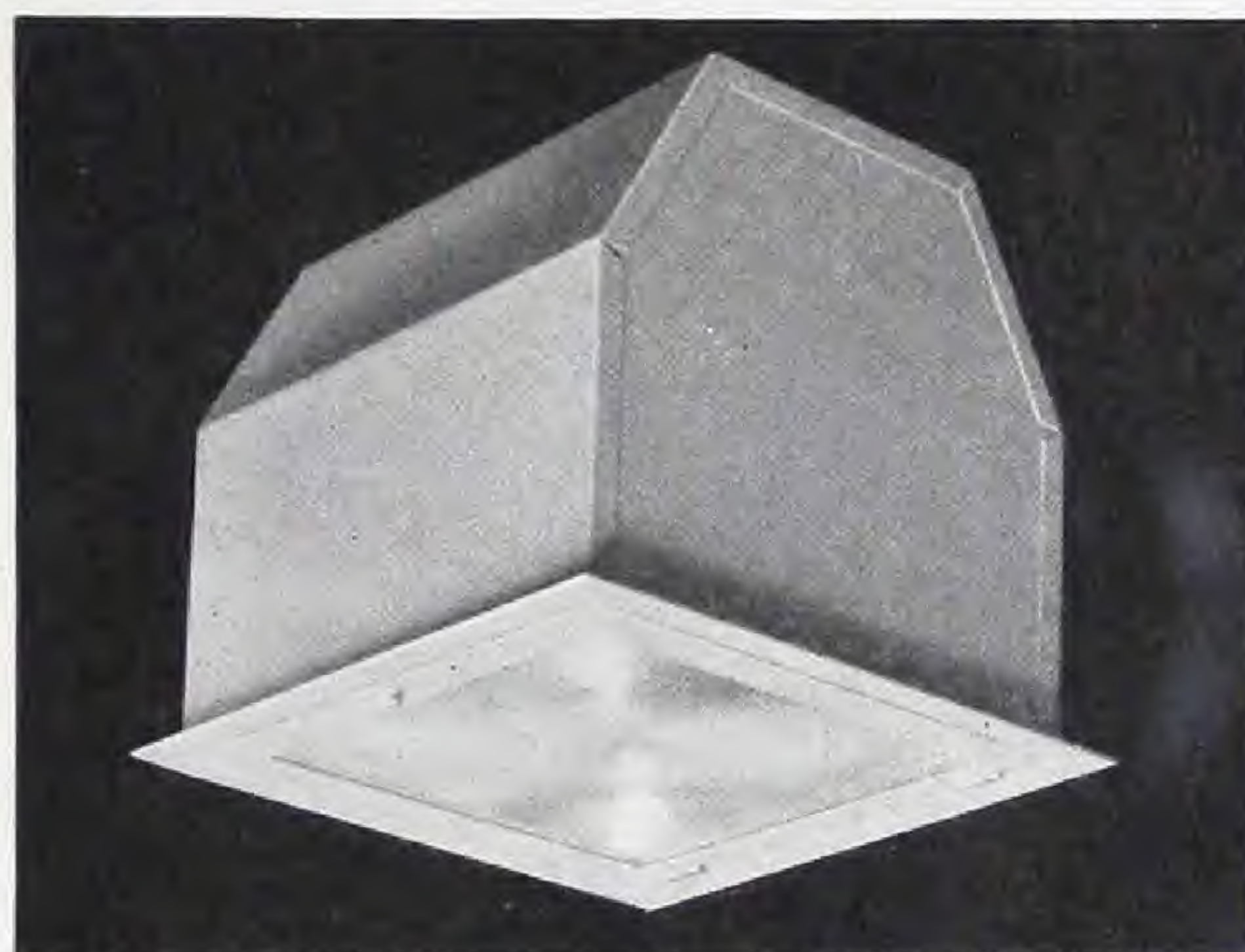
The D-729-T and L units for exposed mounting are composed of a Holophane Controlens held in a cast aluminum frame, the outside of which is finished polished aluminum. The sides of the box are opal diffusing glass to permit pleasing ceiling illumination from the unit. The internal construction includes a chromium finish reflector and receptacle for 150 watt lamp.

Both types are subject to variation in beam width and direction to meet special requirements but when used for surgical work are set for the most efficient beam characteristic as shown in the curves below.

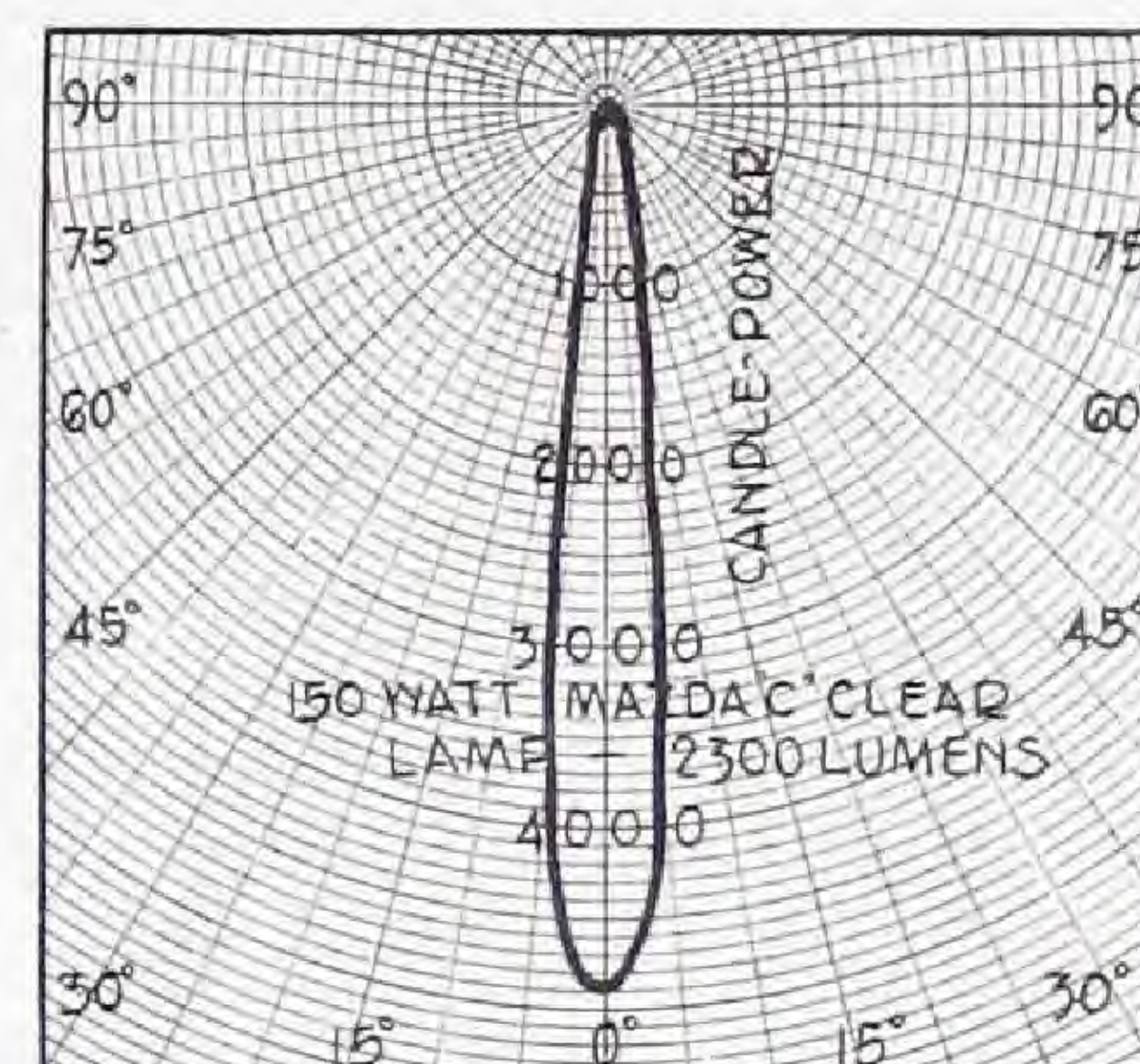
No. B-755-FL is similar to H-755-FL in construction but is proportionately larger to accommodate 300 watt lamp.



D-729-L



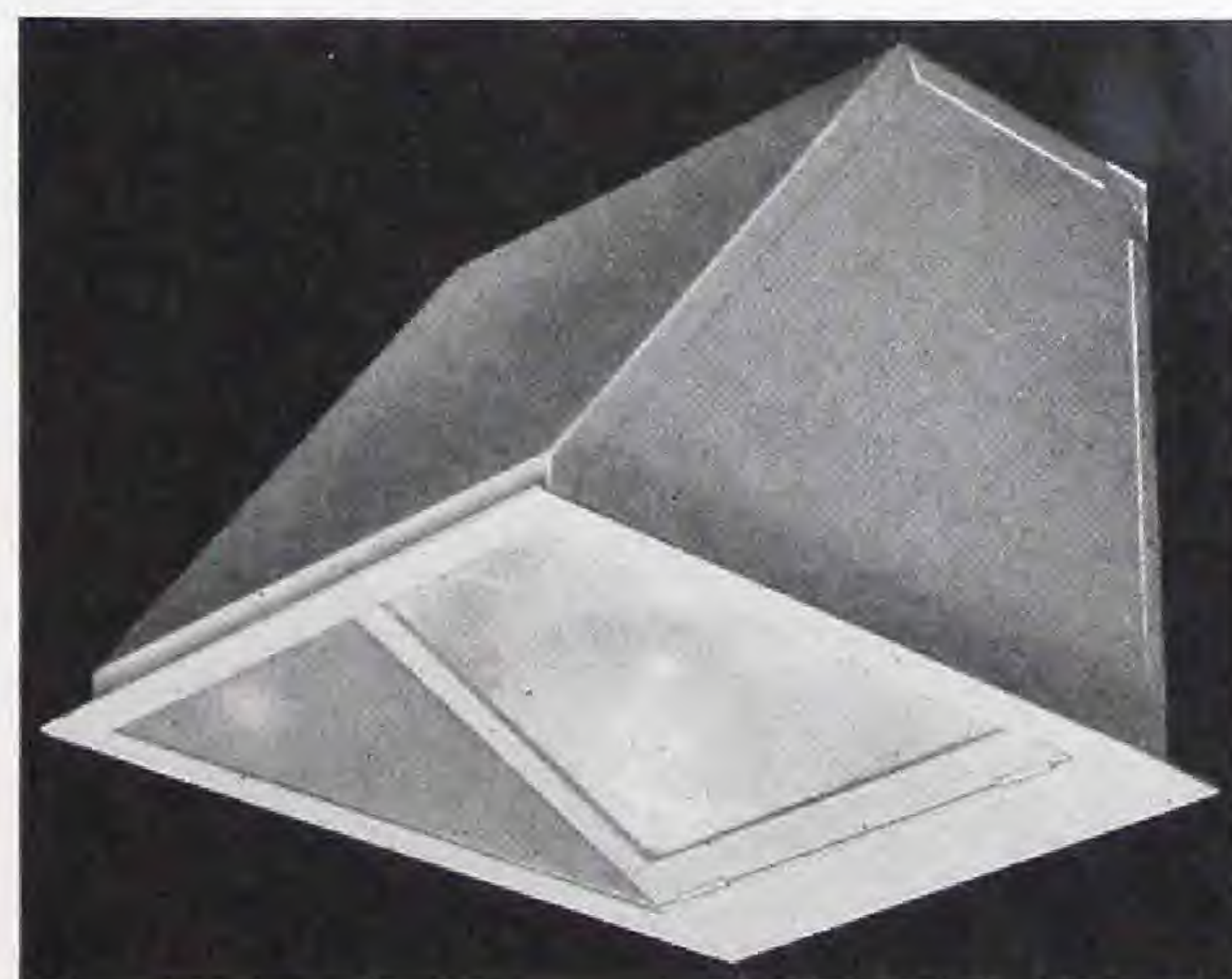
H-755-FL—B-755-FL



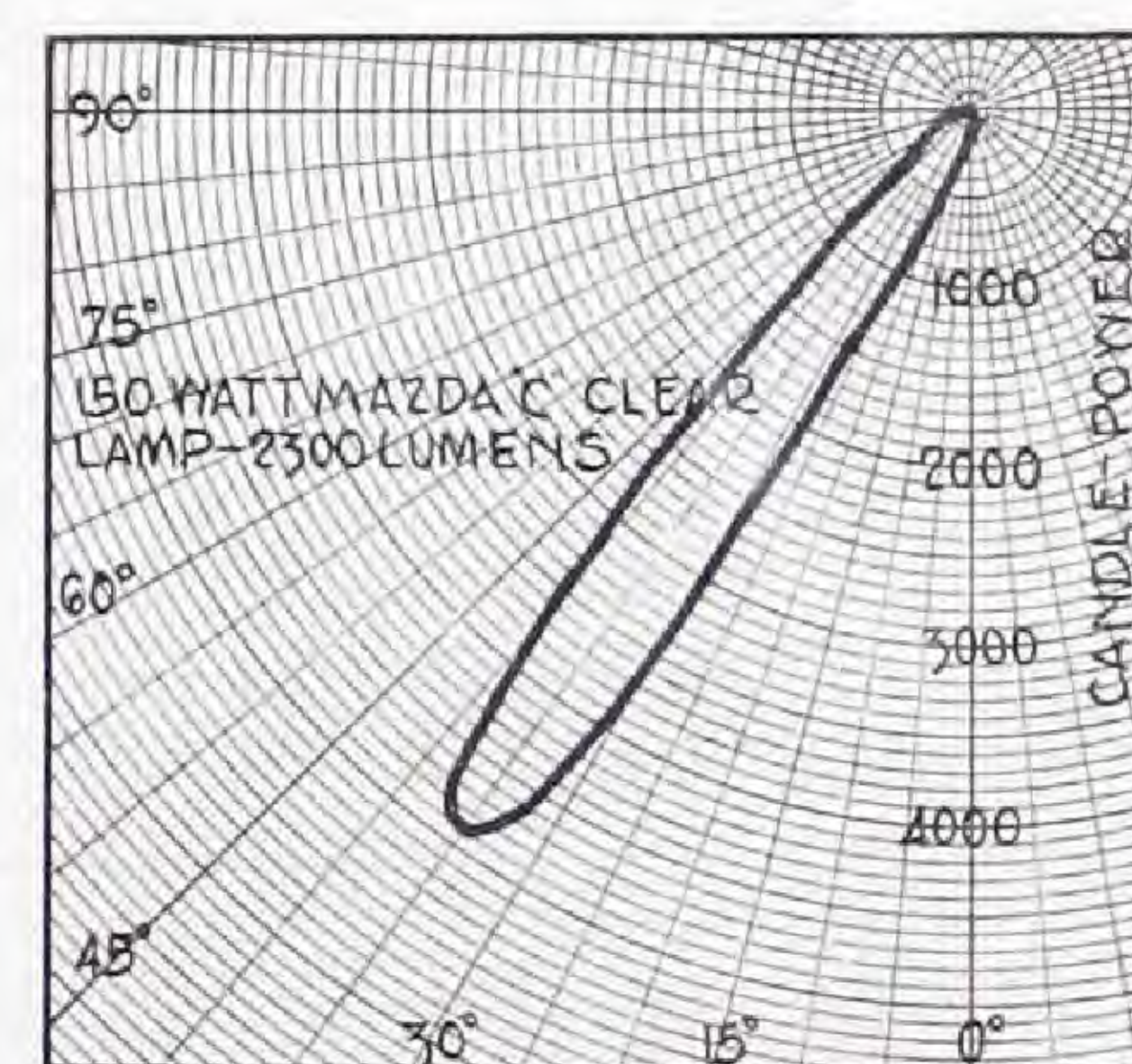
Characteristic Distribution



D-729-T



H-755-TF



Characteristic Distribution

SCHEDULE "I" DISCOUNTS

Catalog Number	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions**			Lamp Wattage
				Length	Width	Depth	
D-729-L	\$24.50	1	18	11"	11"	7½"	100†-150
D-729-T	24.00	1	18	10⅝"	9⅜"	8½"	100†-150
H-755-FL*	25.00	1	37	15¼"	15¼"	12½"	150-200
H-755-TF*	32.00	1	45	20⅞"	15⅞"	14¼"	150-200
B-755-FL	32.00	1	37	15¼"	15¼"	14⅜"	300

* When 200 watt lamps are to be used kindly advise when ordering. † Use ⅞" socket extension with 100 watt lamp.

** Dimensions are approximate. Write for approved drawings if exact dimensions are required for installation.

Lighting of the Future with Holophane

CONTROLENCES

Architectural ("Built-in") Lighting:

Natural lighting devices have always been built in. That is, they have been windows, dormers and skylights, constructed as an integral part of the walls and ceilings and designed as corporate features of the architectural ensemble.

Artificial illuminants in the past were oils or gases that made light by burning. They required air for combustion and ventilation and needed protection against fire hazards, so they could not be built in. The advent of electricity made "built-in" lighting possible.

The traditions and customs that grew around the centuries' use of the crude oil and gas illuminants lingered on into the electric era so that the possibilities of architectural artificial lighting were developed slowly at first. Lately, the growth of "built-in" lighting has been swift and practically all of the outstanding commercial and institutional buildings of recent years contain examples of it.

Its popularity is spreading rapidly and it is undoubtedly the "*Lighting of the Future.*"

Holophane Controlenses:

Controlenses provide the means of control that makes "built-in" lighting really practical and economically possible. They are the answer to the long held desire of the architectural profession for a flexible lighting element that can be used structurally in any pattern or grouping desired.

They satisfy the need of the engineer for easily maintained, economical "built-in" lighting equipment capable of delivering special distributions.

They provide the lighting specialist and decorator with an elastic tool for securing glareless high intensities, directly, economically and attractively.

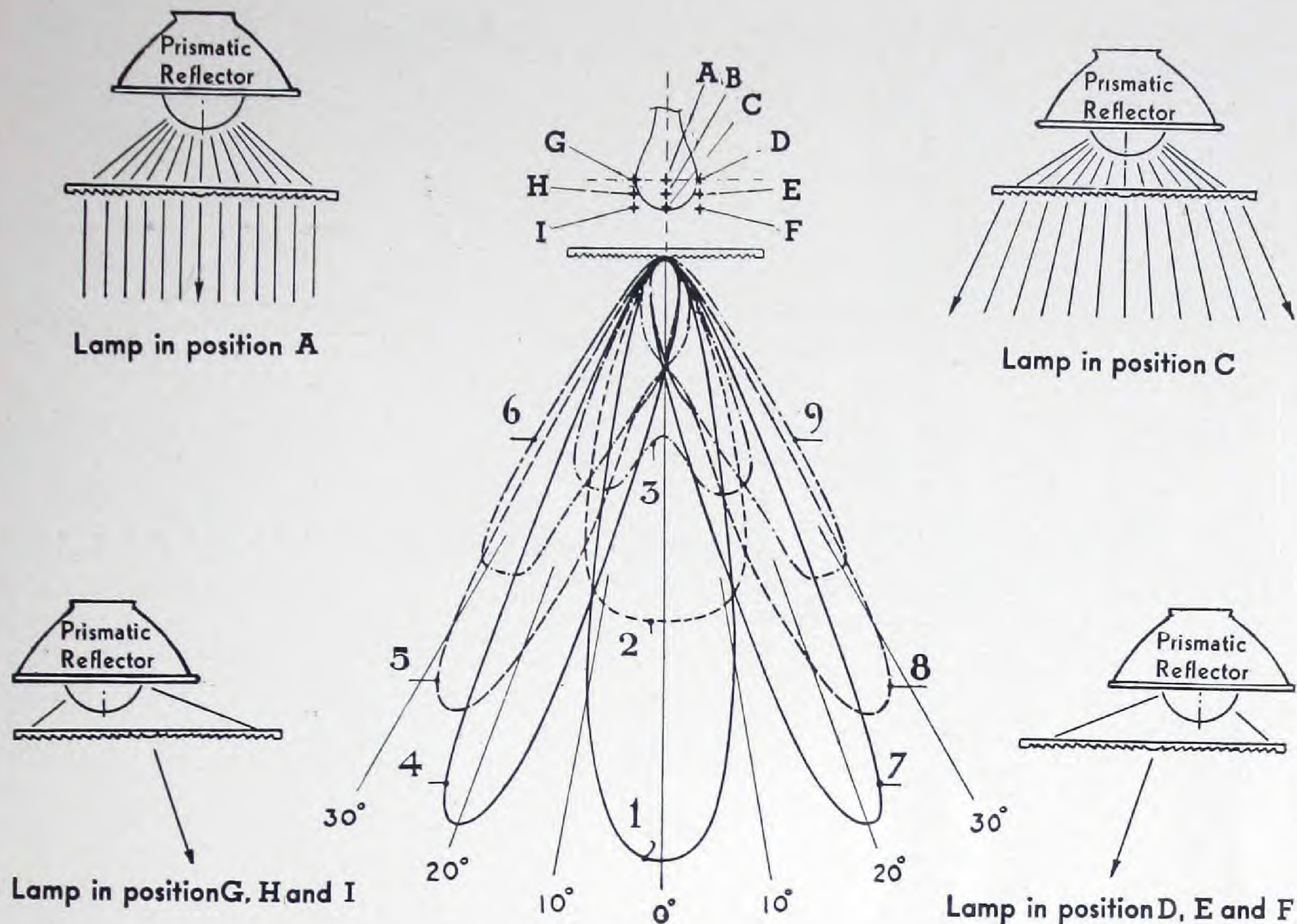
What They Are:

They are prismatic crystal glass plates of varying size and appearance, either rectangular and flat or round and slightly convex, having the optical characteristics and properties of lenses. They involve a conception that is new to lighting, the principle of the "optical train." "Optical trains" could not be used before because of their prohibitive cost. The development of these light directing Controlenses on a commercial scale ends the cost difficulty.

What They Do:

They control the light of the device of which they are a part by being placed across the aperture so that all the light passes through them and in so doing is formed into the desired pattern.

HOLOPHANE SPECIFICS FOR BUILT-IN LIGHTING



Composite polar coordinate curve showing light distributions from Holophane Controlens No. 755 with lamp in nine different focal positions.

The above drawings indicate how the Holophane Controlens functions. With lamp filament in position A, the light flux is directed to produce a focusing light distribution similar to 1. When the filament is in position C, the light is spread, producing an intensive light distribution like 3. The placing of the lamp to the right of the center as in positions D, E and F directs the light flux to the left producing distributions 4, 5 and 6. Similarly, placing the lamp to the left of the center, positions G, H and I, produces distributions 7, 8 and 9.

Other lenses are available having extensive distributions.

Experience in the construction and operation of Controlens units has proven that a prismatic reflector behind the Controlens insures best results because:

1. The efficiency of the "Optical-Train" is higher than when used with any other reflecting medium.
2. The prismatic glass withstands heat without deterioration.
3. The Controlens is lighted uniformly adding to the desirability of the arrangement from an appearance standpoint.

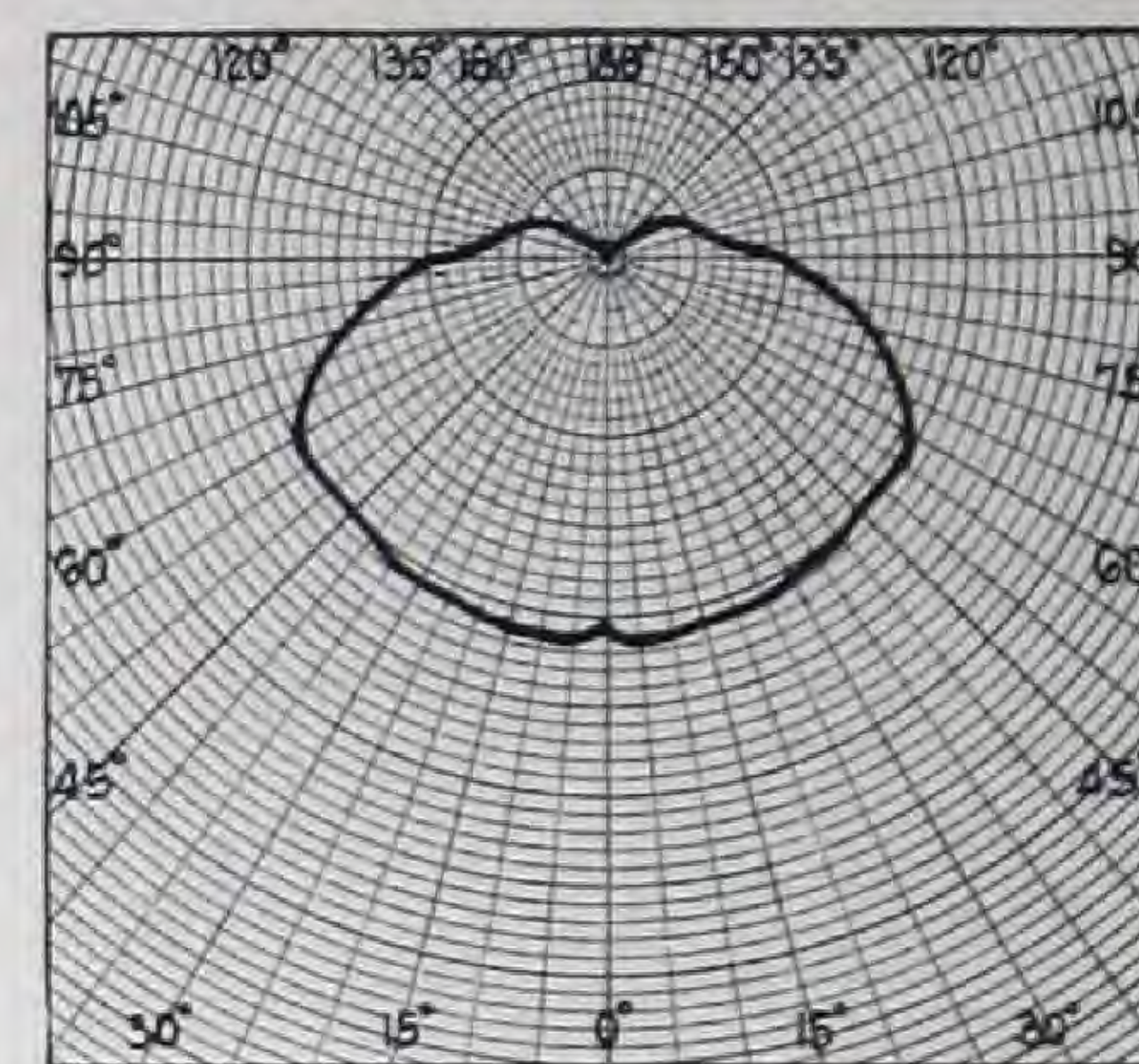
Our Engineering Department will gladly cooperate in the selection or design of "built-in" equipment. There is no charge or obligation for such service.

HOLOPHANE SPECIFICS FOR BUILT-IN LIGHTING



C-1011, C-1211, C-1411

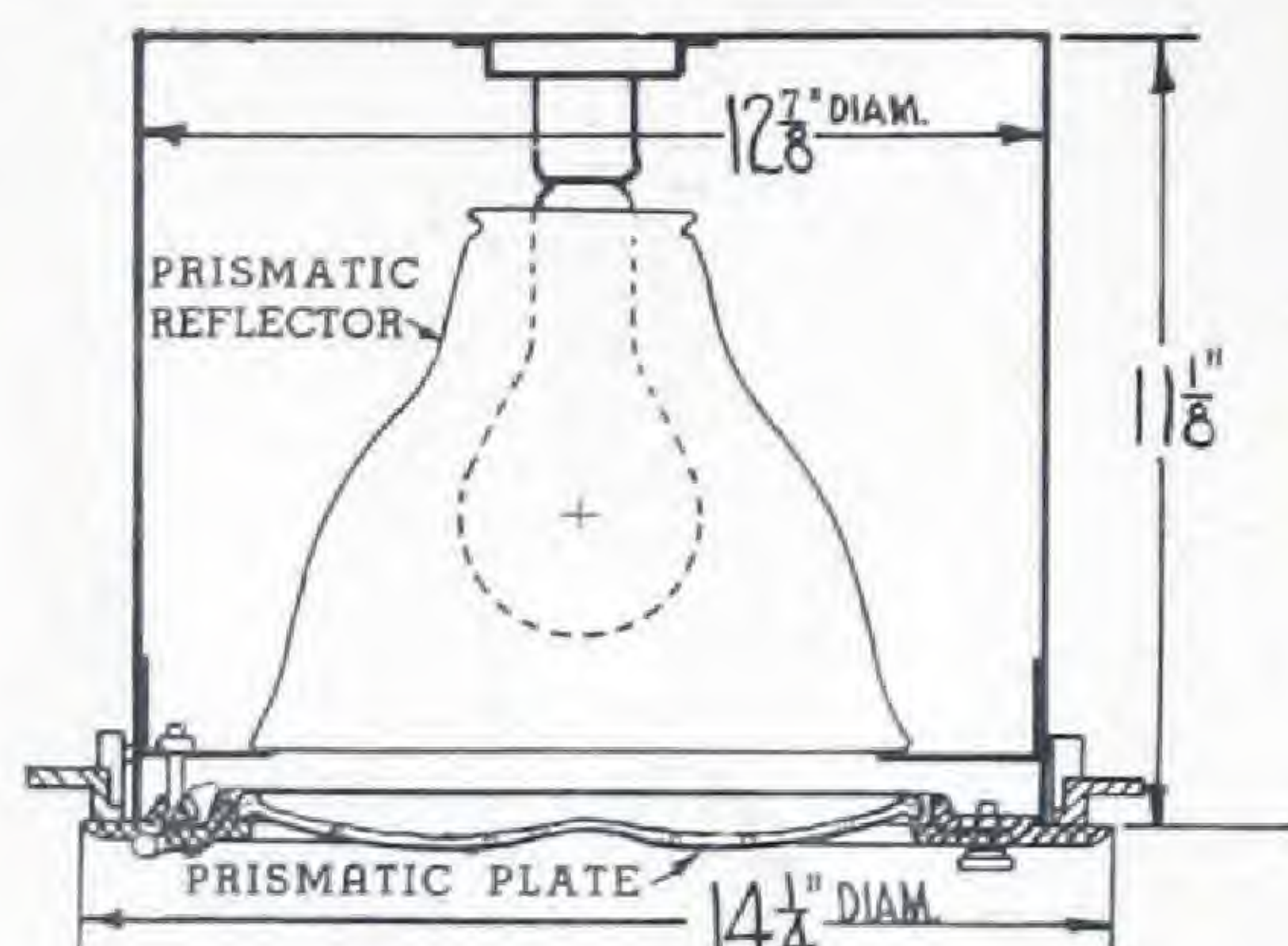
Other units for built-in use are: No. 955, page 12; 938, page 13; H-755-FL, H-755-TF, B-755-FL, page 43; HF-729, page 42; W-792, W-794, page 50; H-790-2F, page 51.



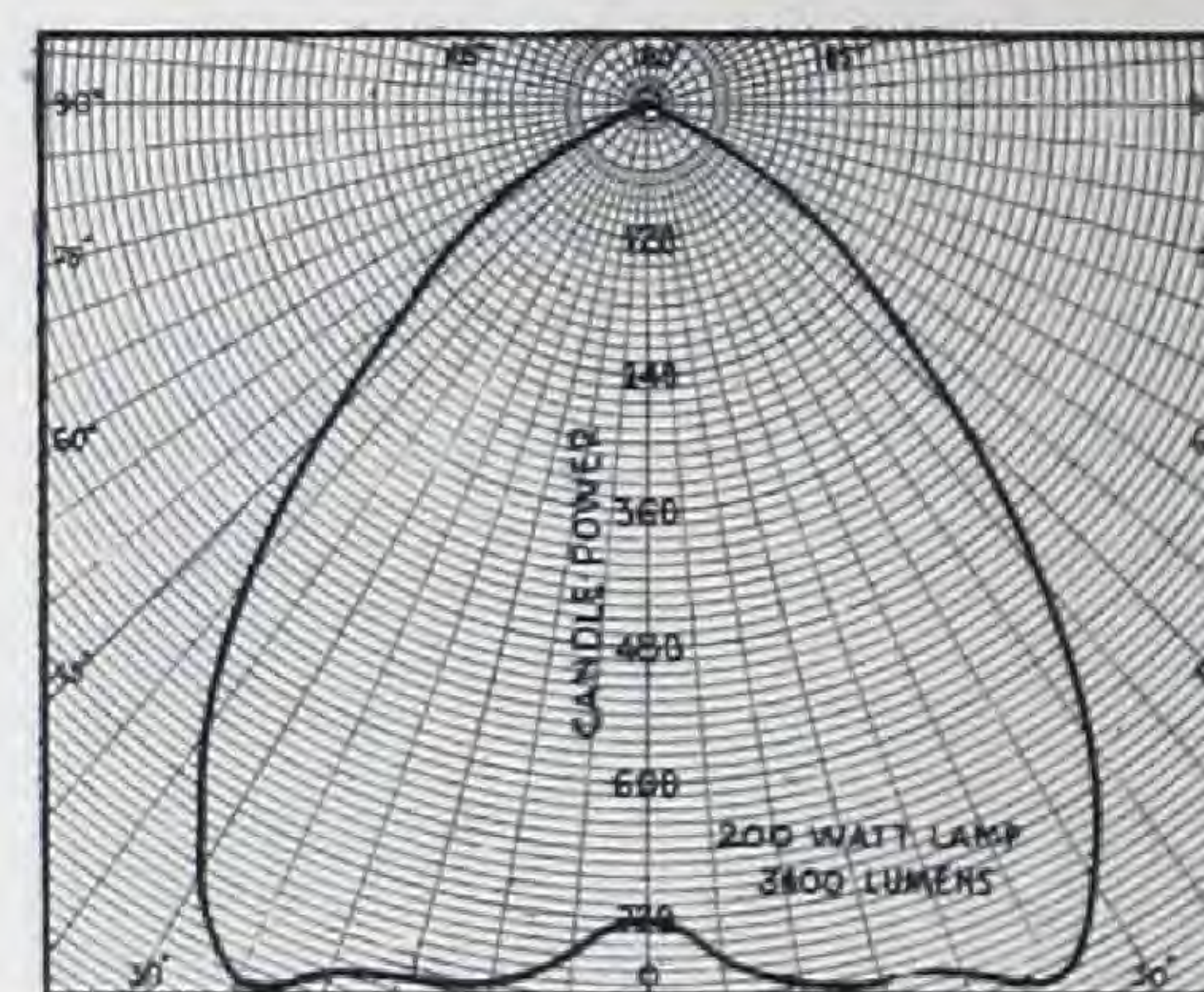
Characteristic Curve
C-1011, C-1211, C-1411

For low ceiling areas Holophane hemispheres and No. F-2336-C are the first step toward overcoming difficulties generally experienced by the use of hanging fixtures in such locations.

Holophane Hemispheres, Nos. C-1011, C-1211, C-1411 comprise a prismatic hemisphere held by three set screws in a satin nickel finish ceiling fixture with sockets for main lamp and night light set in proper position.



Section View thru—F-2336-C



Characteristic Curve—F-2336-C

No. F-2336-C is an intensive flush mounting, circular, lens specific for use with 200 watt lamp maximum. It is furnished complete and consists of a 14 gauge steel circular roughing box finished inside aluminum glyptal lacquer, outside grey baked enamel and has 4-1/2" knockouts on the side spaced 90° apart; cast aluminum flange, finished grey baked enamel, that is held to the roughing box by 4 concealed mounting screws and to which is attached by hinge and a screw catch the frame holding the diffusing plate; prismatic reflector with holder and proper socket for 200 watt lamp.

A metal plaster ring can be supplied when required to facilitate installation. Installation procedure is similar to that outlined on pages 48 and 49.

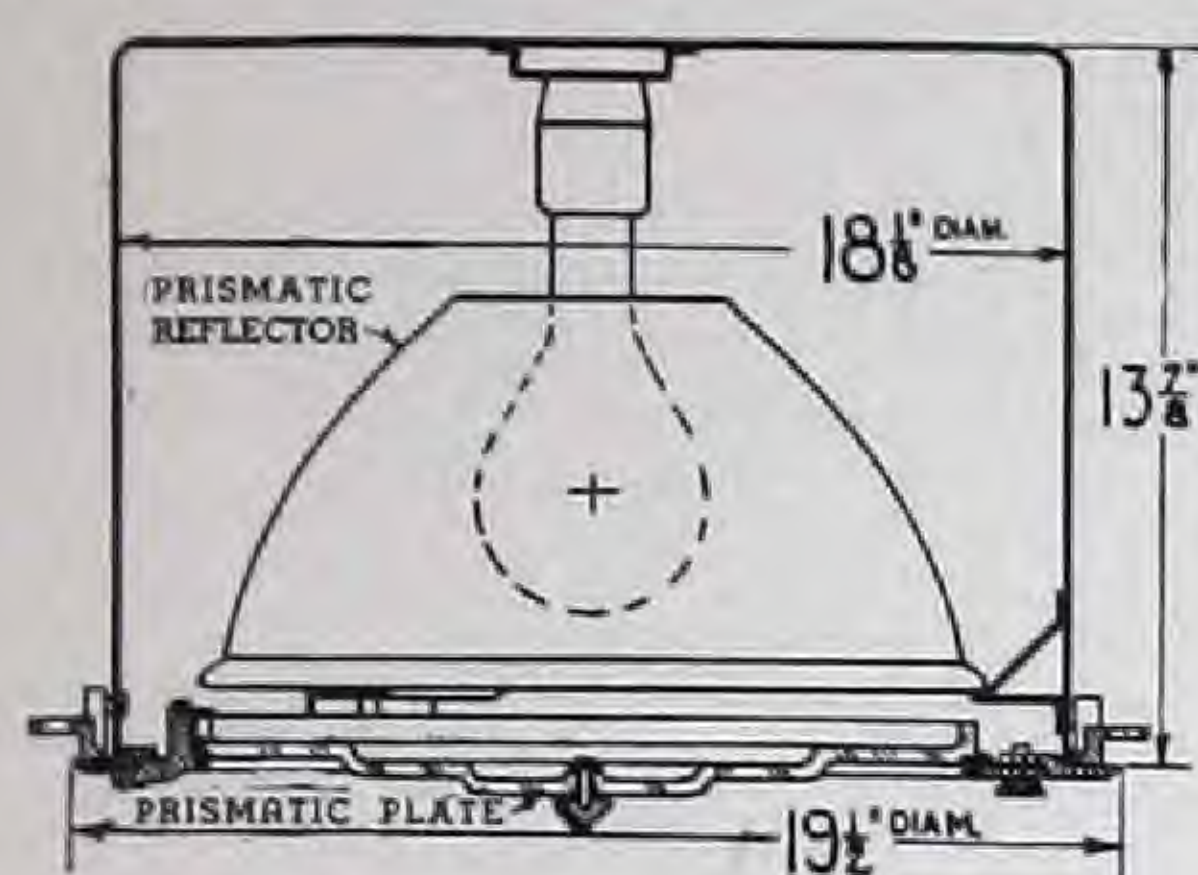
SCHEDULE "I" DISCOUNTS

Complete Unit	Fixture Only	Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions**			Mazda Lamp
						Dia. Over-All	Dia. under Flange	Depth	
C-1011	0310	1011	\$9.40	3	60	12"	9 1/2"	6 5/8"	75-100
		1011	7.50	3	25	12"		2 3/8"	
C-1211	0312	1211	1.90	3	35	10"	11 1/2"	4 3/4"	75-100
		1211	11.50	3	94	13 7/8"		7 5/8"	
C-1411	0314	1411	8.00	3	29	13 7/8"	13 1/2"	2 3/8"	150
		1411	3.50	3	65	12"		5 3/4"	
*F-2336-C		1411	18.75	3	108	15 7/8"	12 7/8"	8 1/2"	200
		1411	11.50	3	30	15 7/8"		2 1/4"	
*F-2336-C		1411	7.25	3	78	14"	12 7/8"	6 3/4"	200
		1411	22.00	1	25	14 1/4"		11 1/8"	

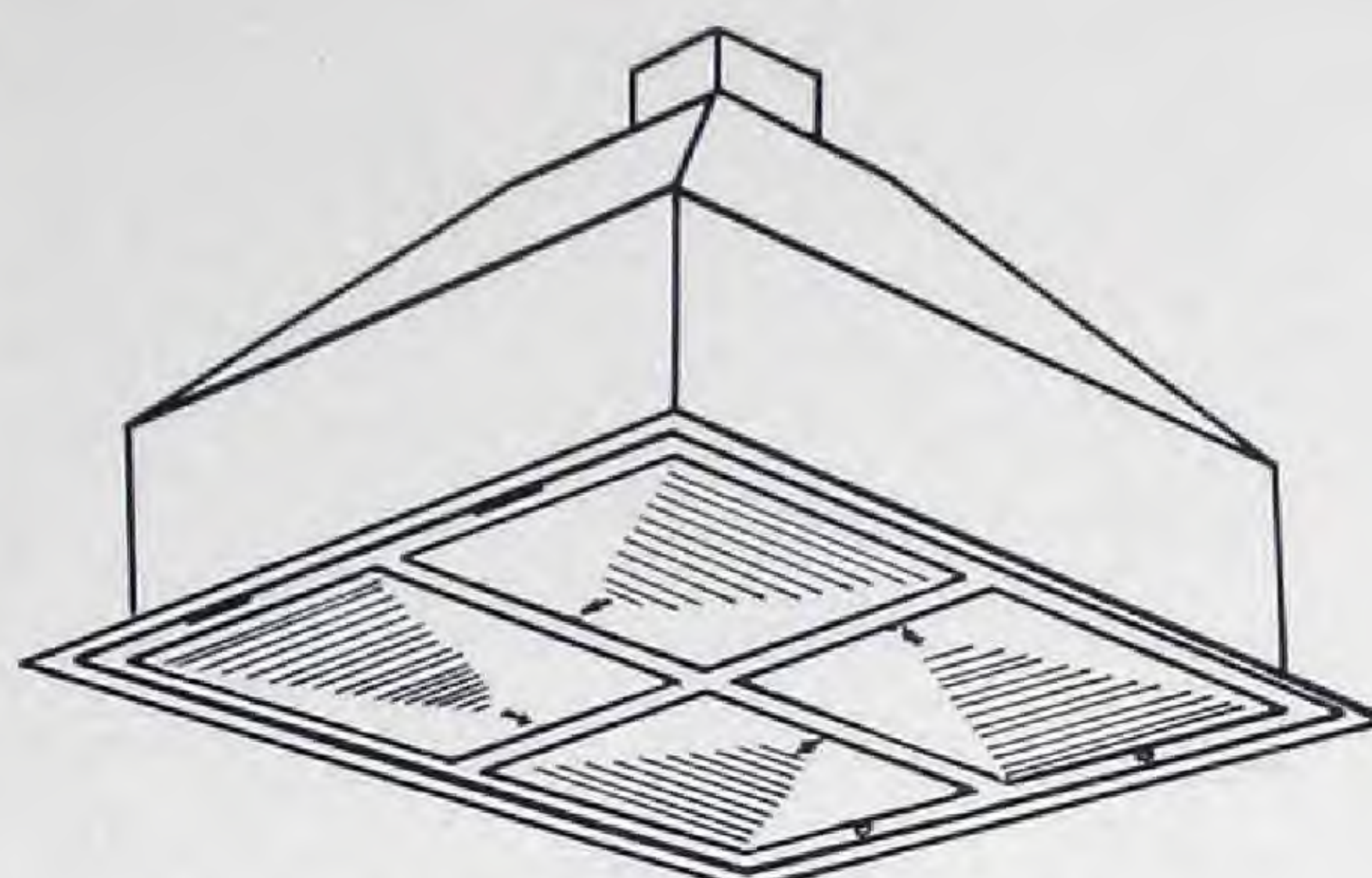
* Circular cast iron plaster ring can be furnished at \$3.00 list additional.

** Dimensions of built-in specifics are approximate. Write for approved drawings if exact dimensions are required for installation.

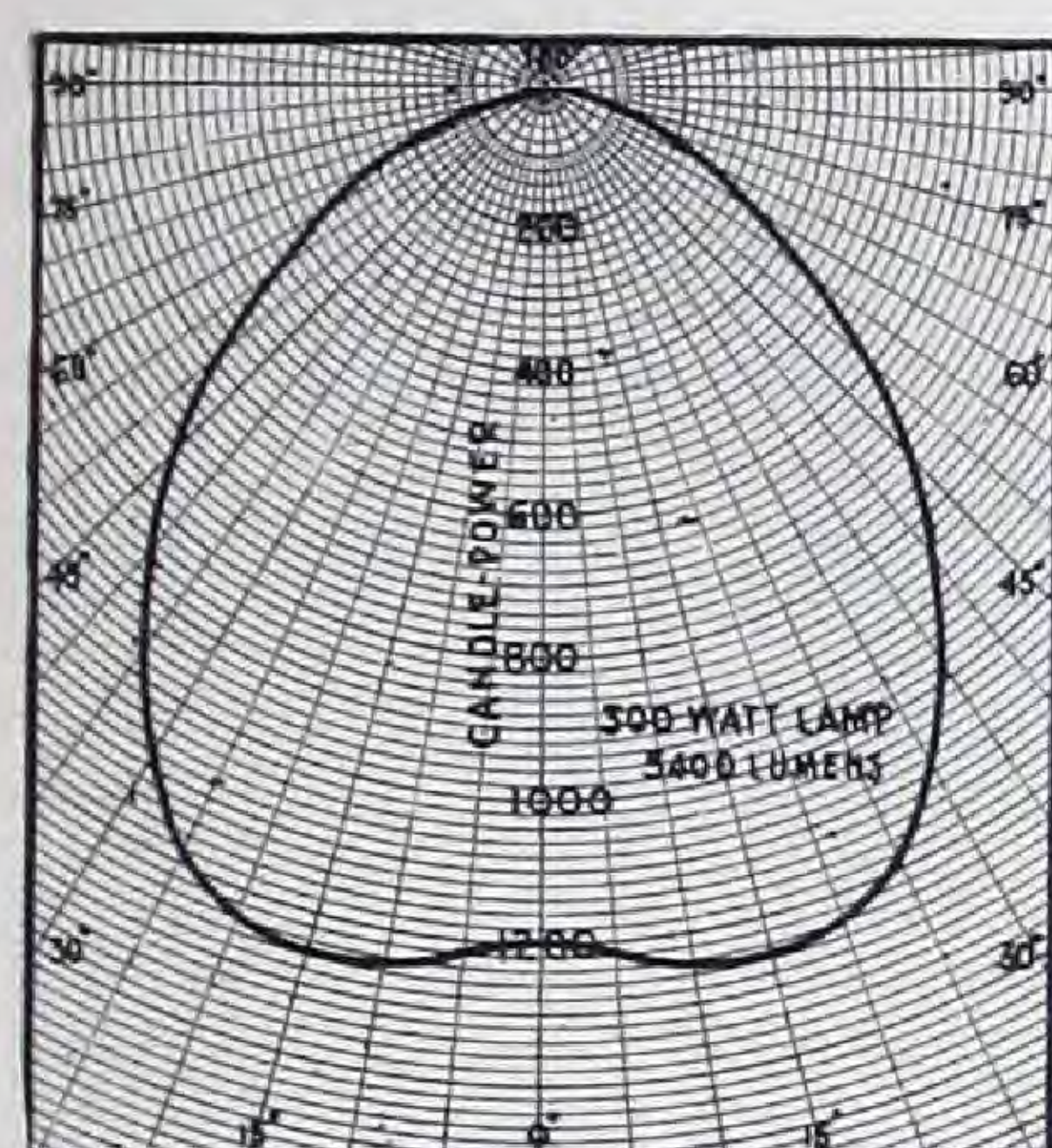
HOLOPHANE SPECIFICS FOR BUILT-IN LIGHTING



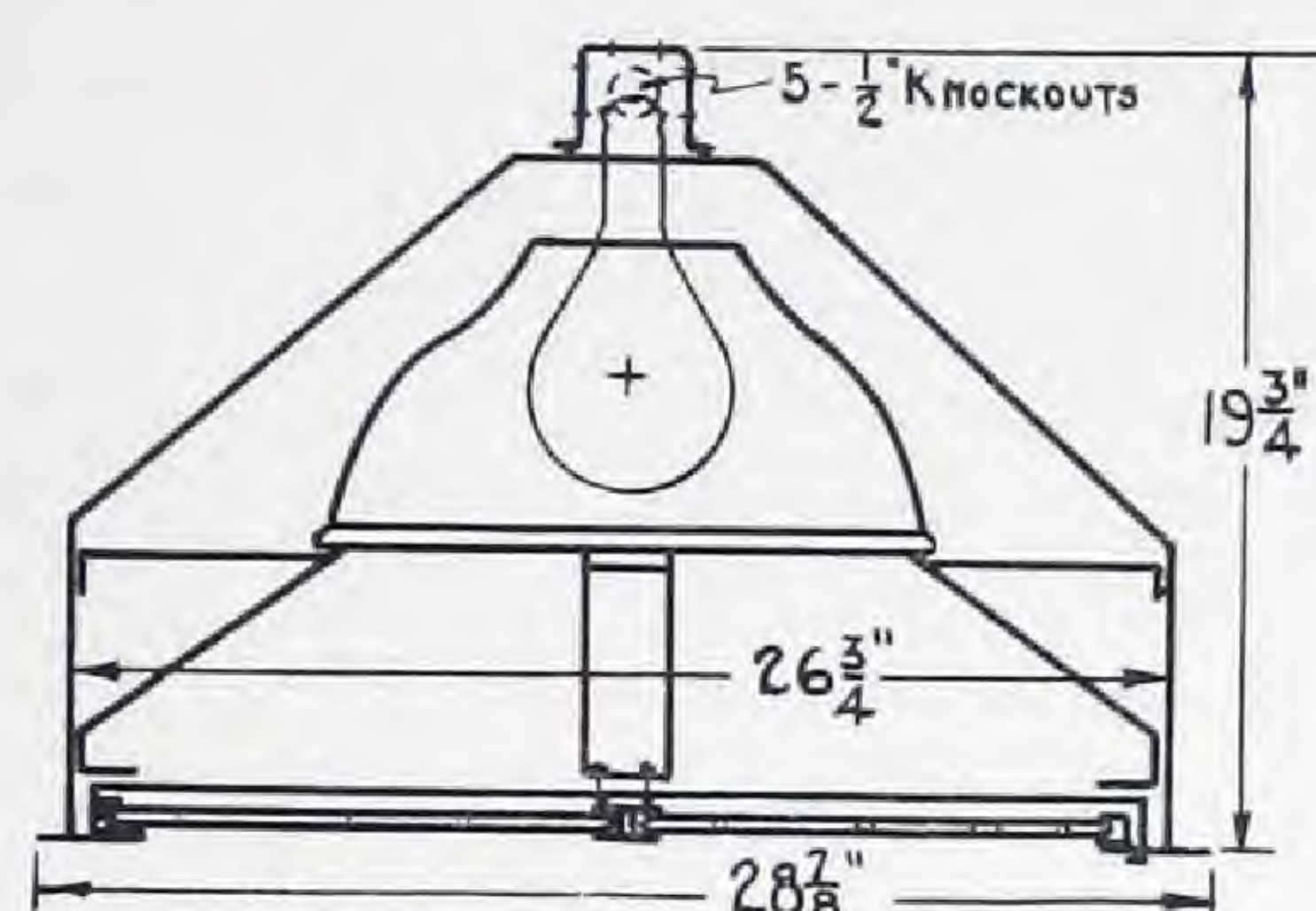
Sectional View F-6681-S



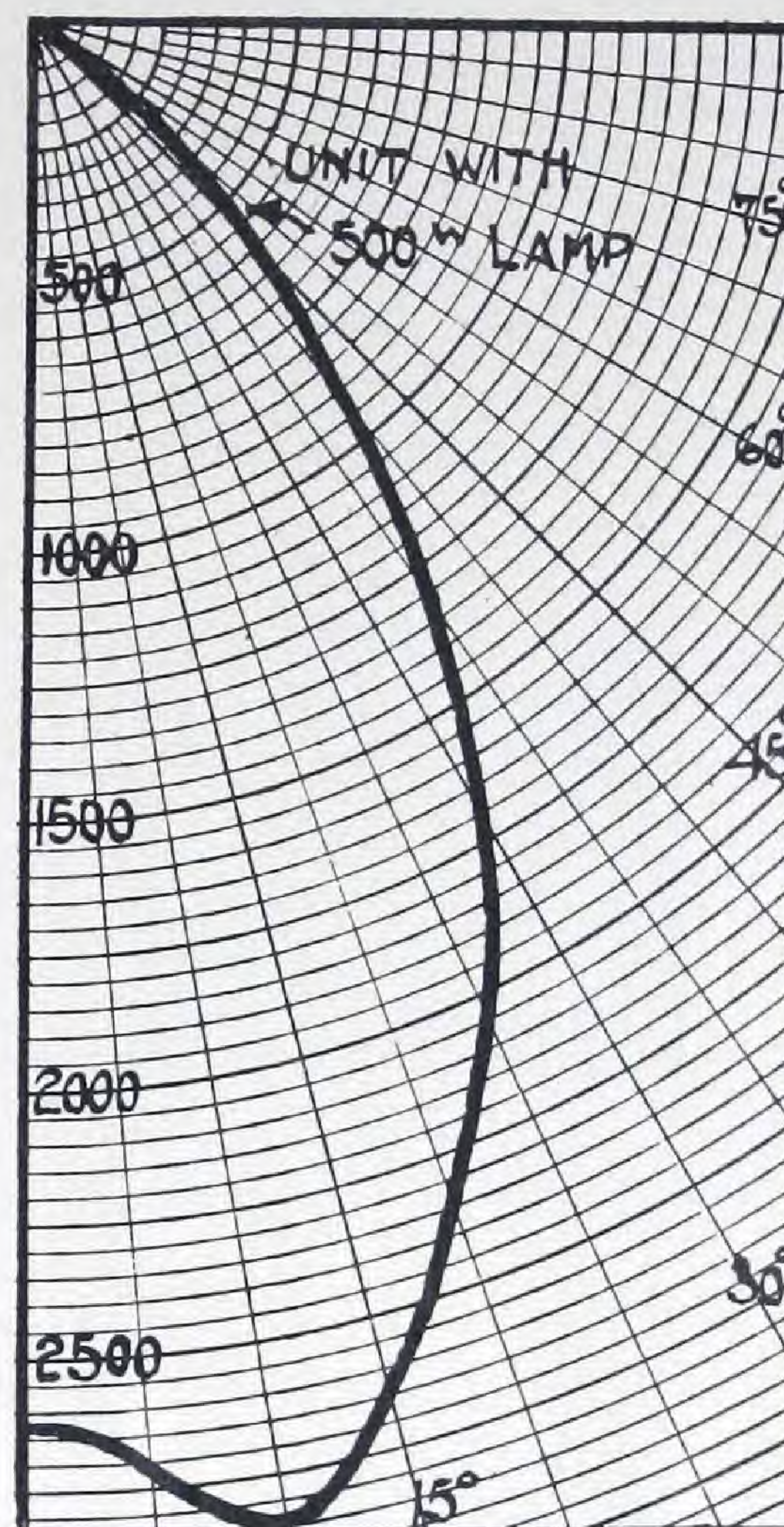
Perspective View H-761-4-FL



Characteristic Curve
F-6681-C and S



Sectional View
H-761-4-FL-500



Characteristic Curve
H-761-4-FL

These units with intensive light distribution are particularly suited for auditoriums, gymnasiums, public buildings, etc., or any location where hanging fixtures are objectionable and built-in lighting is desired. Spacing should not exceed the mounting height.

No. F-6681-C and S are similar in construction to F-2336-C but are proportionately larger to accommodate a 300 and 500 watt lamp and use a 15" Prismatic plate of decorative pattern, either smooth or stepped contour.

Holophane No. H-761-4-FL (500), a flush mounting specific using four Holophane Controlenses, is furnished complete and consists of: No. 14 gauge steel roughing box finished inside aluminum glyptal lacquer, outside grey baked enamel and has one 1/2" knockout on each side and top; a No. 12 gauge steel flange also finished grey baked enamel, that is held to the roughing box by twelve concealed mounting screws and to which is attached by three hinges and two thumb screws the frame holding the Controlens; prismatic reflector with supports and porcelain mogul base receptacle properly located for 500 watt lamp. Contrasted with most Controlens specifics the light distribution from this unit cannot be varied.

No. H-761-4-FL (1000) is constructed similarly except its depth is 2 1/2" greater to compensate for the 1000 watt lamp.

Installation procedure is outlined on pages 48 and 49.

SCHEDULE "I" DISCOUNTS

Catalog Number	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions			Lamp Wattage
				Length	Width	Depth	
† H-761-4 FL- 500	\$74.00	1	113	28 7/8"	28 7/8"	19 3/4"	1- 500 W.CL.
† H-761-4 FL-1000	85.00	1	140	28 7/8"	28 7/8"	22 1/4"	1-1000 W.CL.
				Flange Diam.	Box Diam.	Depth	
* F-6681-C† or S	32.50	1	50	19 1/2"	18 1/8"	13 7/8"	300 W.CL.

* Circular cast iron plaster ring can be furnished at \$3.60 list additional.

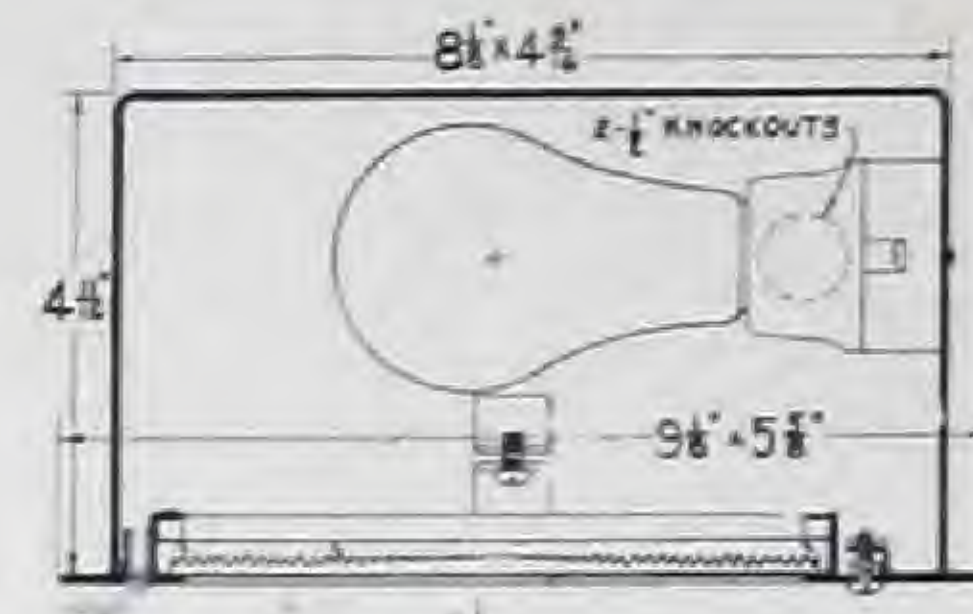
† Protective wire guard furnished on unit at \$6.00 list additional.

‡ C type unit has convex bottom plate; S type, stepped plate, shown above.

HOLOPHANE SPECIFICS FOR BUILT-IN LIGHTING



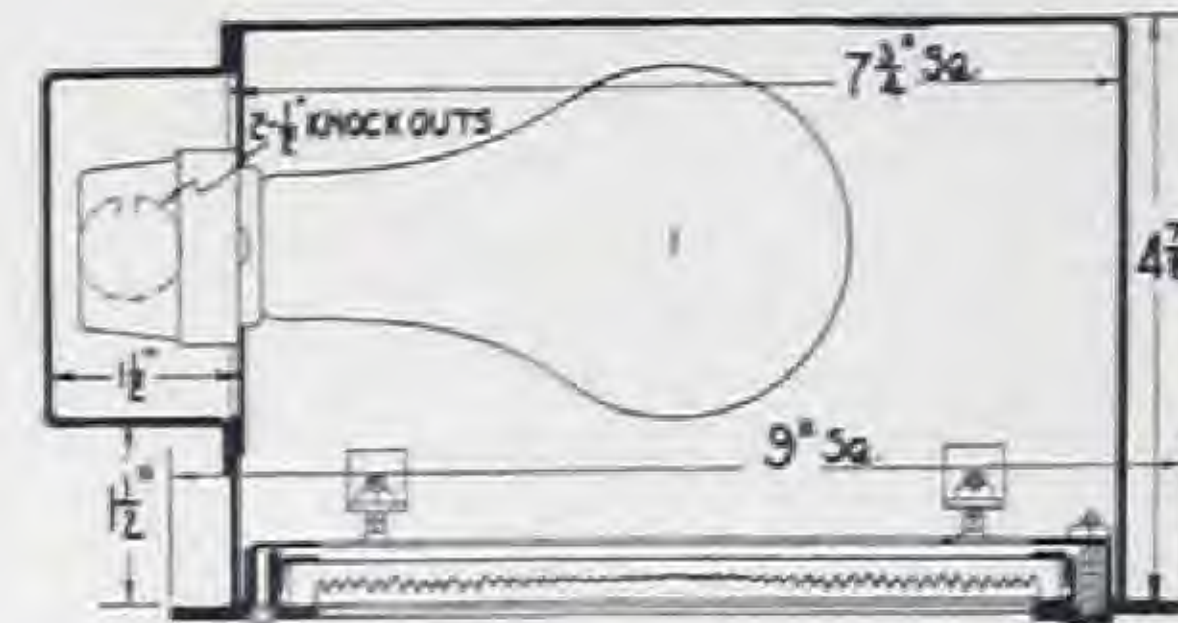
B-744-F



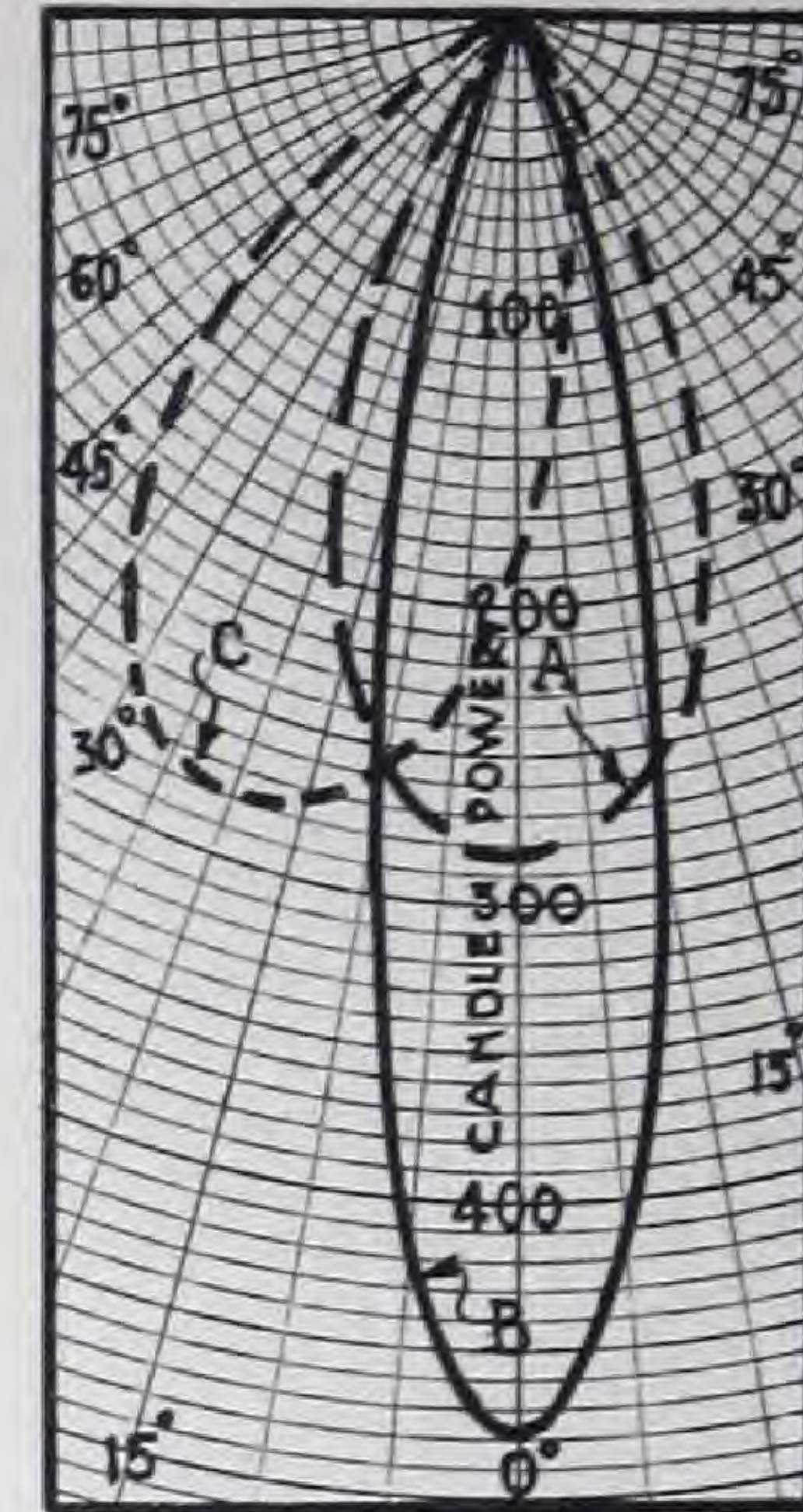
Sectional Detail B-744-F



W-745-1



Sectional Detail W-745-1



Characteristic Curves
using 60 w. lamp

There are many locations where low wattage lamps are to be used but where a concentration of light is required in restricted areas.

Holophane No. B-744-F is a flush mounting specific using a Holophane Controlens. It is furnished complete and consists of: No. 16 gauge steel roughing box finished inside with aluminum glyptal lacquer, outside with grey baked enamel and has one $\frac{1}{2}$ " knockout on each side; a No. 16 gauge steel flange also finished in baked enamel, that is held to the roughing box by two concealed mounting screws and to which is attached by means of a continuous hinge and round head screw the frame holding the Controlens; a medium base porcelain receptacle properly located for 60 watt lamp to give distribution A. The lamp position behind the Controlens can be arranged to produce any light distribution varying from A to B or C as shown on the distribution curves above.

No. W-745-1 is similar in construction and performance but employs the No. 745-VF Controlens and will take a 100 watt lamp.

Installation is made by framing the plaster opening with either an angle iron or wood block, securing the roughing box through the sides to the frame so that the bottom edge will be flush with the finished plaster line. After the electrical connections have been made the face plate is then attached to the box and painted the same color as the ceiling.

SCHEDULE "T" DISCOUNTS

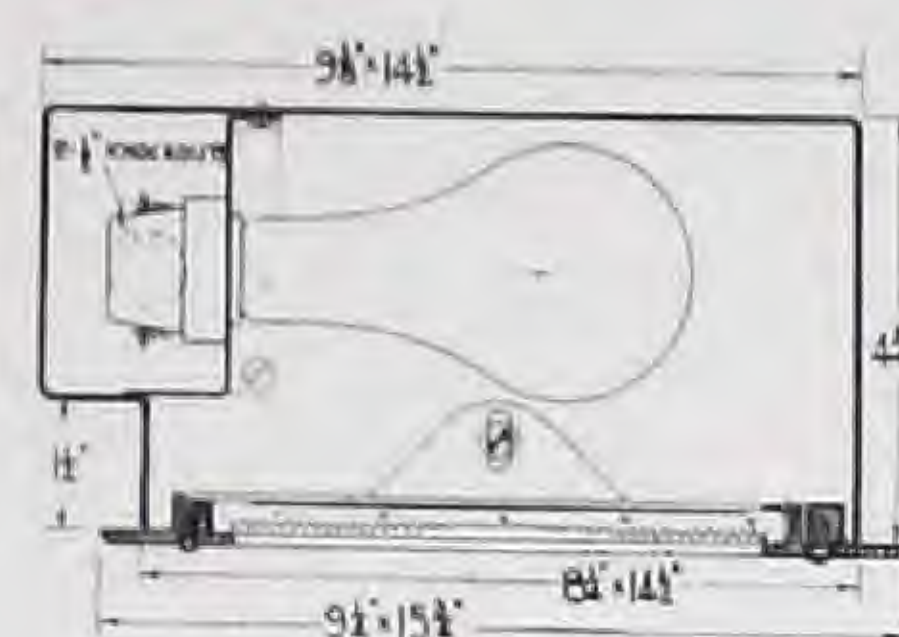
Catalog Number	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions*			Lamp Wattage
				Length	Width	Depth	
B-744-F	\$12.00	8	80	9 $\frac{1}{8}$ "	5 $\frac{5}{8}$ "	4 $\frac{3}{4}$ "	40†-60 W.
W-745-1	13.00	4	40	9"	9"	4 $\frac{7}{8}$ "	60†-100W.

* Dimensions are approximate. Write for approved drawings if exact dimensions are required for installation.
† Use $\frac{3}{8}$ " socket extension.

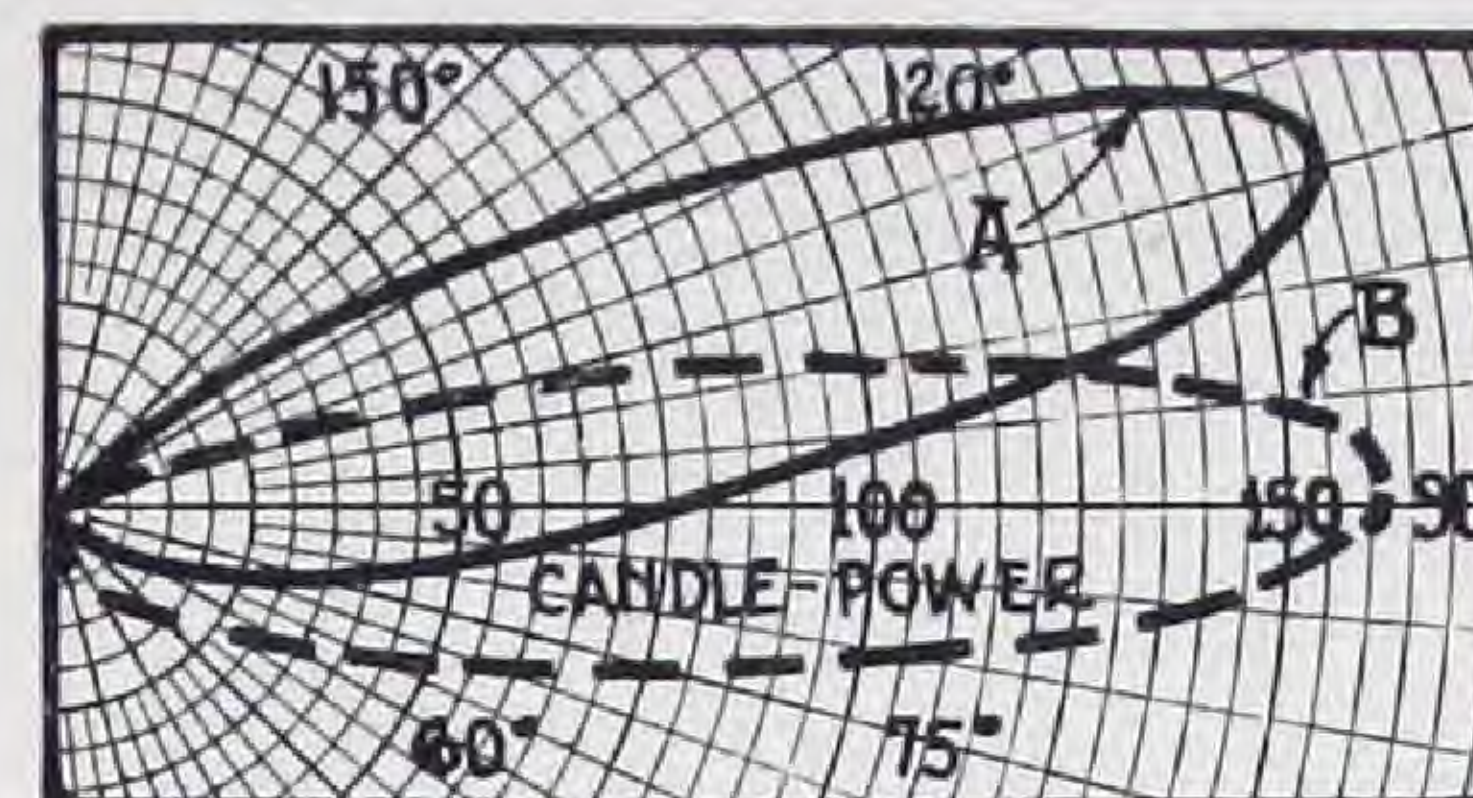
HOLOPHANE SPECIFICS FOR BUILT-IN LIGHTING



W-796-2



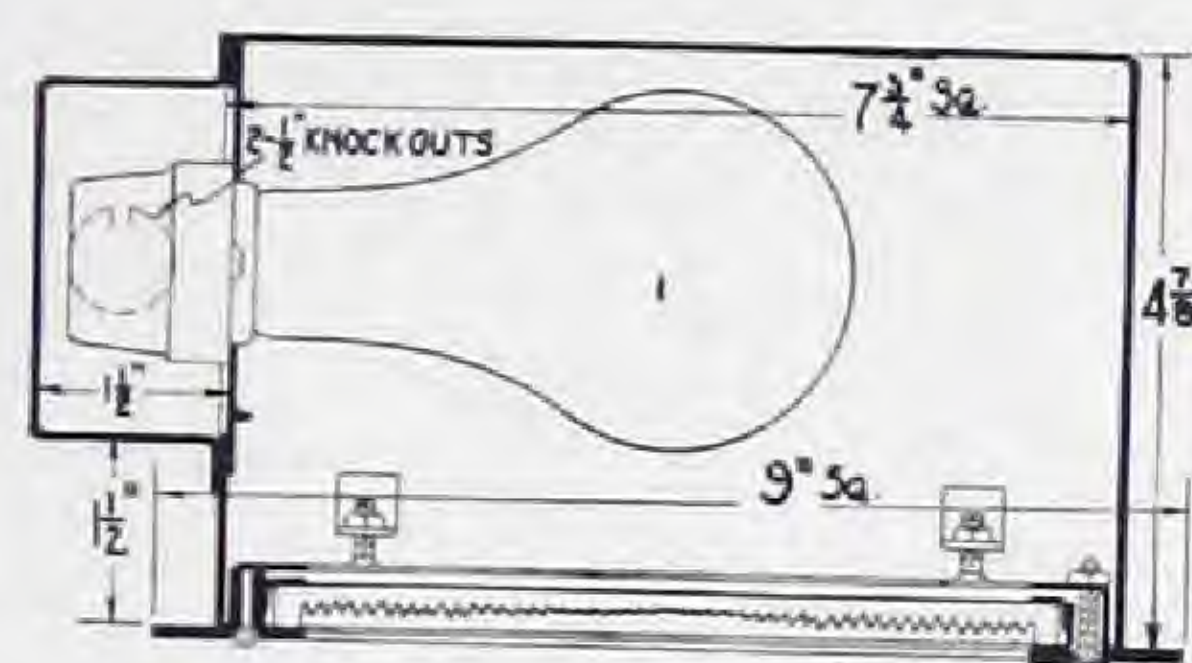
Sectional Detail
W-796-2



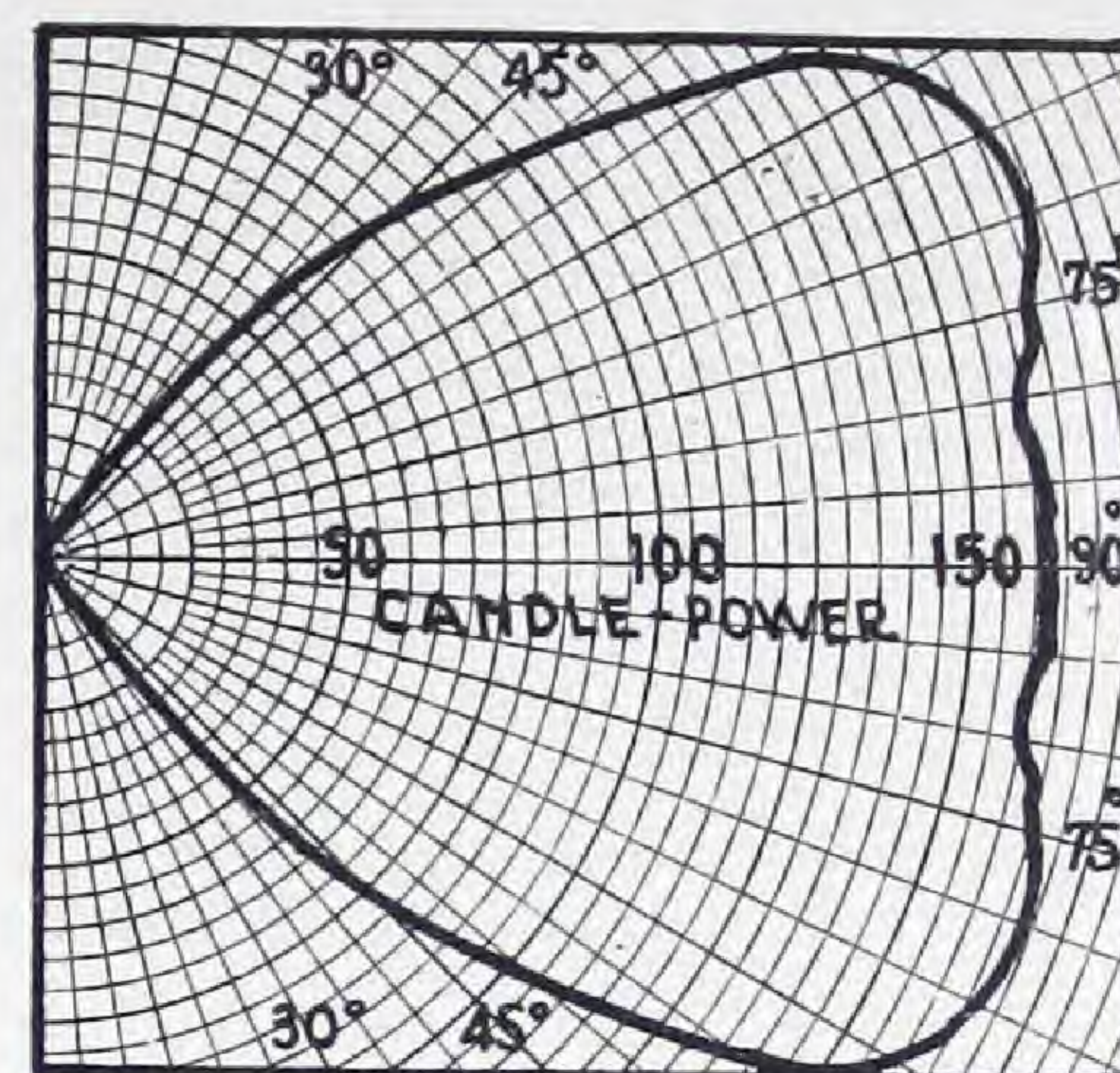
Vertical Distribution



W-796-1



Sectional Detail
W-796-1



Lateral Distribution
Characteristic Curves

The wide elliptical light distribution obtained from these specifics makes their use especially desirable for indirect illumination from units recessed in the walls near the ceiling. They can be used in corridors, reception rooms, or any location where indirect illumination from "built-in" fixtures is desired. These units may also be used in ceilings to light walls or other vertical surfaces or over counters. Maximum spacing should not exceed 8 feet.

Holophane No. W-796-2 is a flush mounting specific using two Holophane Controlenses. It is furnished complete and consists of: No. 16 gauge steel roughing box finished inside with aluminum glyptal lacquer, outside with grey baked enamel and has one 1/2" knockout at each end; removable wiring compartment with two porcelain receptacles properly positioned to give distribution "A," a cast aluminum flange that is held to the roughing box by two concealed mounting screws thru ears (with slotted holes for adjustment purposes) extending in from the frame, and to which is attached by a continuous piano hinge and two French head screws the frame holding the prismatic Controlenses. The lamp position behind the Controlenses can be arranged to produce any light distribution varying from A to B as shown on the distribution curves above with the lateral spread through the angle of maximum candlepower remaining constant. No. W-796-1 has the same lighting characteristics except that only one lens is used thereby reducing the lamp capacity. The construction differs in that the flange is made of No. 16 gauge steel finished with grey enamel.

Installation is made by framing the plaster opening with either an angle iron or wood block, securing the roughing box through the sides so that the front edge will be flush with the finished plaster line. After the electrical connections have been made the face plate is then attached to the box. The Controlens should be installed with the diamond pattern on the inside towards the lamp and with the parallel prisms on the outside of the lens located horizontally.

SCHEDULE "I" DISCOUNTS

Catalog Number	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions*			Lamp Wattage
				Length	Width	Depth	
W-796-2	\$22.00	1	20	15 3/4"	9 1/4"	4 3/4"	2-100 W.
W-796-1	13.00	4	40	9"	9"	4 7/8"	1-60† or 100 W.

* Dimensions are approximate. Write for approved drawings if exact dimensions are required for installation.

† Use 7/8" socket extension.

HOLOPHANE FLUSH WALL UNITS

The Holophane No. W-792 wall night light is a complete unit consisting of a black enameled steel roughing box and a cast aluminum frame containing the Holophane Controlens No. 792. A chromium plated reflector is mounted on the cast plate and forms the back of the fitting. An intermediate base pigtail socket for 25 watt, T-6½ Mazda Lamp is mounted in the proper position. The finish of the exposed parts is polished aluminum. Dull aluminum or any paint finish can be supplied. The unit is to be placed in the wall with the hinge at the top. The Controlens must be placed in the frame with the horizontal prisms at the top and with the vertical flutes on the inside.

SPACING:—Maximum spacing should not exceed 15 feet. To determine the distance from the floor to the top of the wall light divide the width of the corridor by 4.3.

USE:—For the night lighting of corridors, bedrooms, wards and other similar locations.

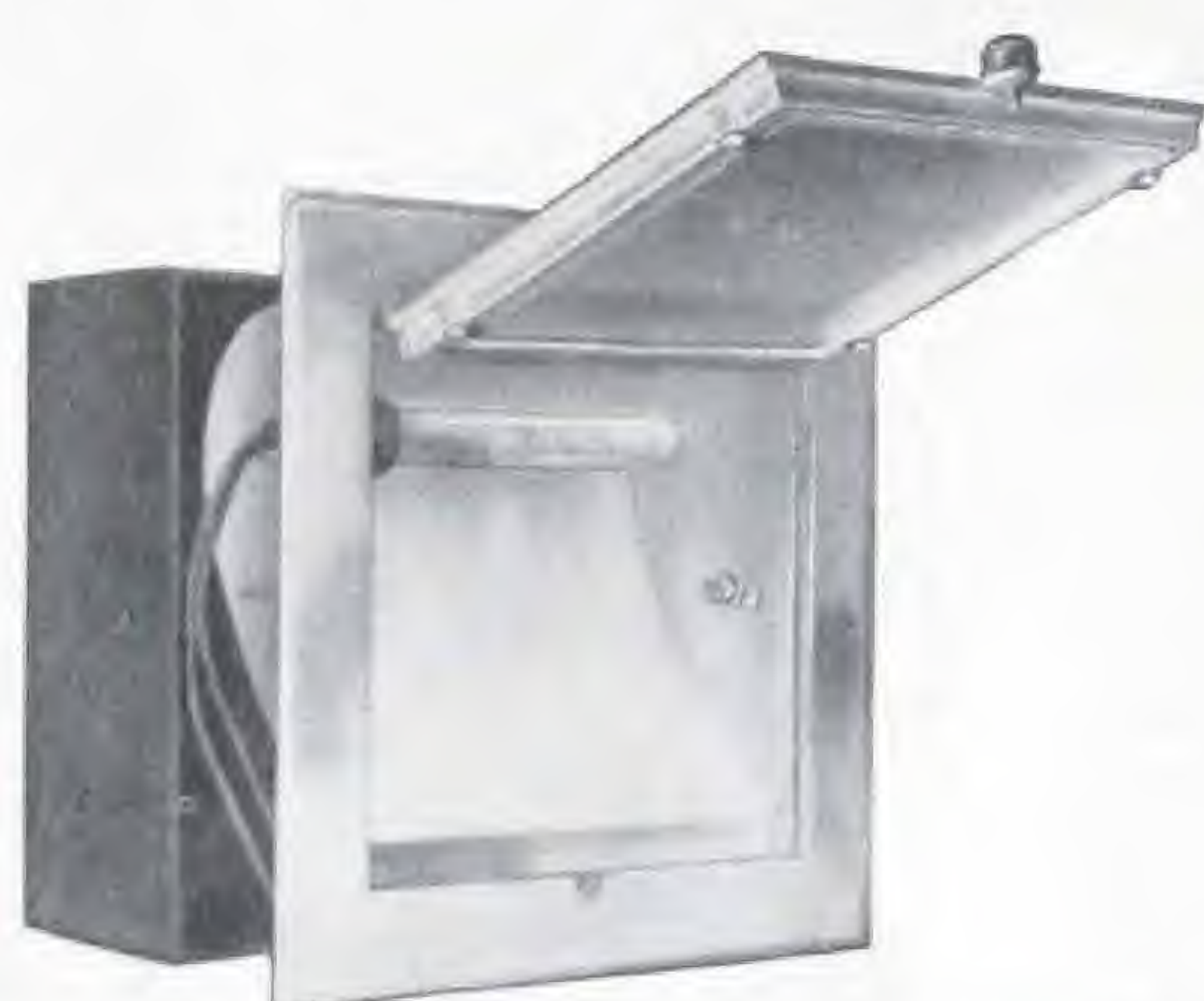
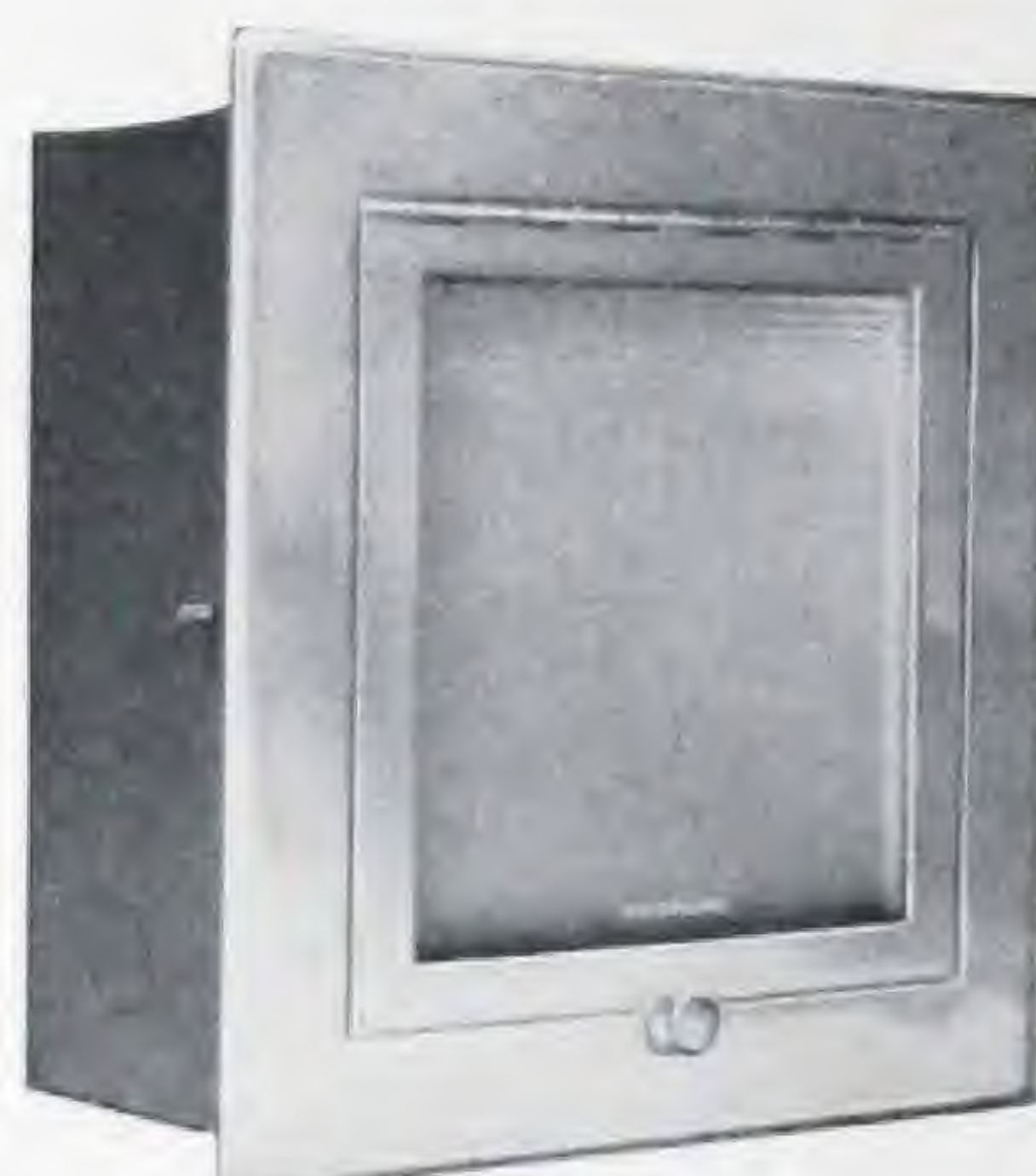
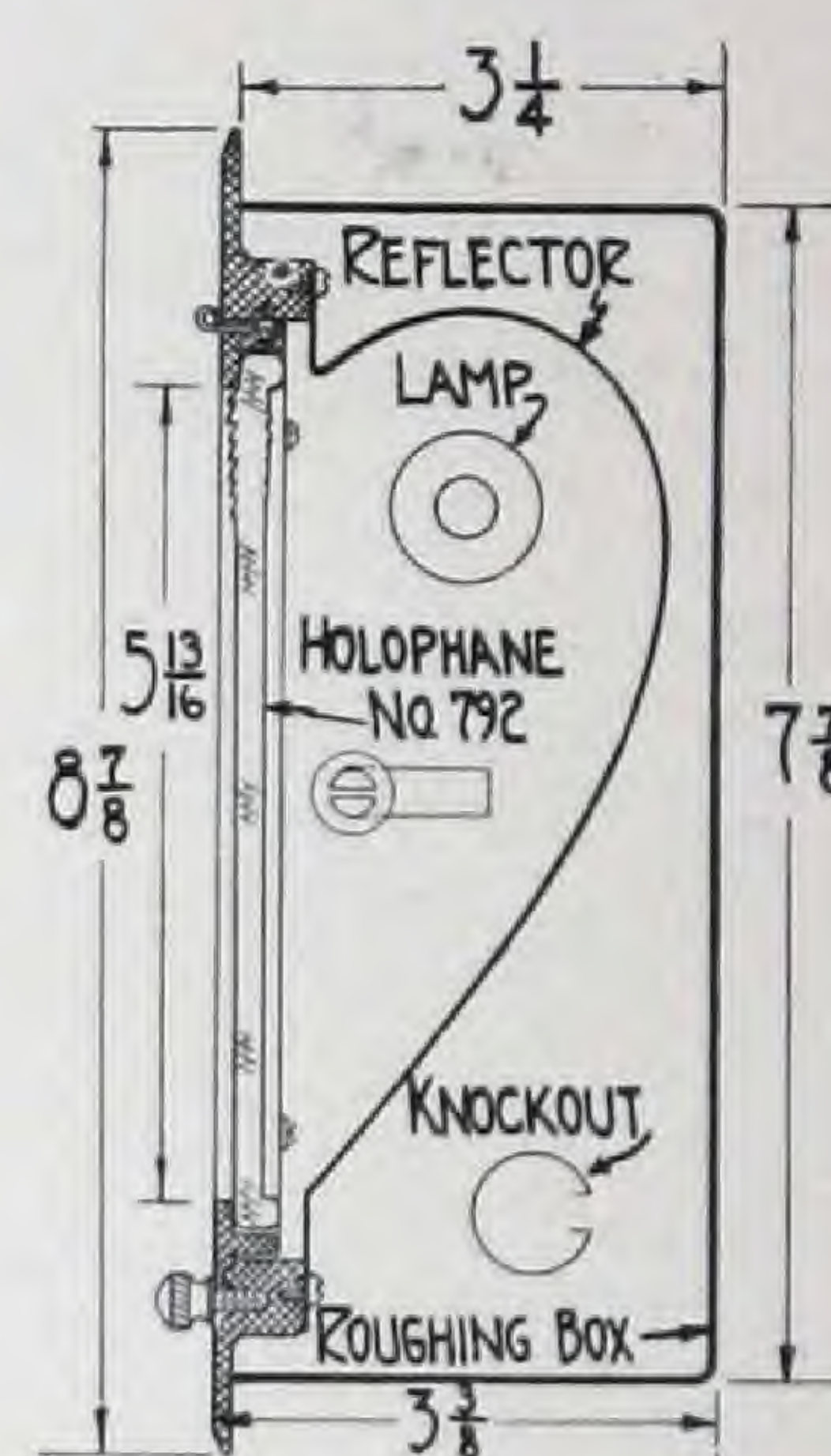


Photo of Unit Showing Construction



Holophane No. W-792



Section Through Unit

The Holophane No. W-794 for ceiling illumination is similar in construction to No. W-792 but uses a 9" x 12" Controlens and takes a 150 watt T-10 clear tubular lamp. No wire is supplied.

USE:—For installation flush in the upper part of side walls to illuminate the ceiling. It delivers a wide spread, uniform, semi-indirect distribution. It may also be mounted flush in ceilings for lighting displays on vertical side walls. The fixture front is finished in polished aluminum.

SCHEDULE "T" DISCOUNTS

Catalog No.	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions*			Mazda Lamps
				Length	Width	Depth	
W-792	\$13.00	8	56	8 7/8"	8 7/8"	3 3/8"	25 watt T-6½
W-794	22.00	1	20	16 1/8"	12 1/8"	4 3/8"	150 watt T-10

* Dimensions are approximate. Write for approved drawings if exact dimensions are required for installation.

HOLOPHANE CONTROLENS UNITS FOR LIGHTING VERTICAL SURFACES

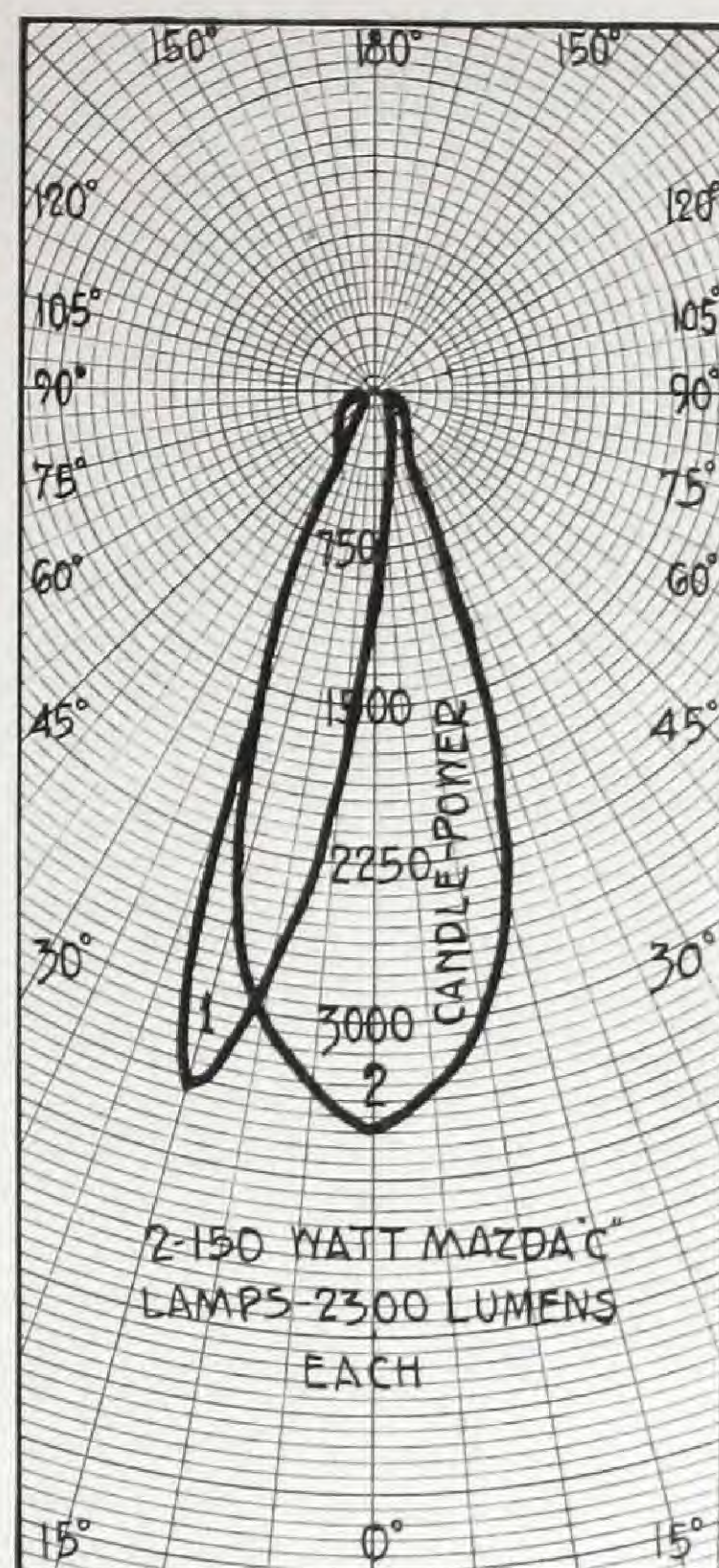


H-790-2
Unit Without Flange



H-790-2F
Unit With Flange

This side towards wall



Photometric Distribution Curves
Taken With Both Lamps Burning.
1—Through center of unit at right
angle to blackboard.
2—Through angle of max. C. P.
showing lateral spread.



This is the latest and most efficient development for the lighting of brokers' boards, blackboards, maps, photograph racks, bulletin boards, and similar surfaces. The direction of the rays is such that no matter how highly glazed the surface is, bright patches, light haze, glare and annoying reflections are prevented and from all normal positions the surface appears uniformly lighted. The unit consists of: a 16 gauge steel roughing box, separate face plate containing a hinged door and screw catch; two compound prismatic lenses (No. 790-VF), two polished aluminum reflectors, sockets and removable wiring channel. The unit is furnished NOT wired. Finish of box and front, grey baked enamel.

SPACING DATA: Maximum spacing between units should be equal to $\frac{3}{4}$ of the mounting height above the center of the space to be lighted (viz.: blackboard). The unit should be mounted away from the surface lighted a distance equal to 27% of the height above the center of the surface, to the center of the lenses, with the wiring channel towards the surface lighted.

SCHEDULE "I" DISCOUNTS

Catalog Number	List Price	Std. Quantity	Ship. Weight Std. Qt.	Overall Dimensions			Lamp Wattage
				Length	Width	Depth	
H-790-2	\$23.50	1	30	14 $\frac{5}{8}$ "	9 $\frac{3}{8}$ "	5 $\frac{3}{4}$ "	2-150 W.-CL.
H-790-2F	23.50	1	31	15 $\frac{1}{2}$ "	10 $\frac{7}{16}$ "	5 $\frac{3}{4}$ "	2-150 W.-CL.

HOLOPHANE SPECIFICS FOR RAILROAD CARS AND GENERAL USE

These light directors have been designed to meet the special requirements of railway car lighting and to give proper light distribution when used with fixtures and lamps of railway car lighting type.

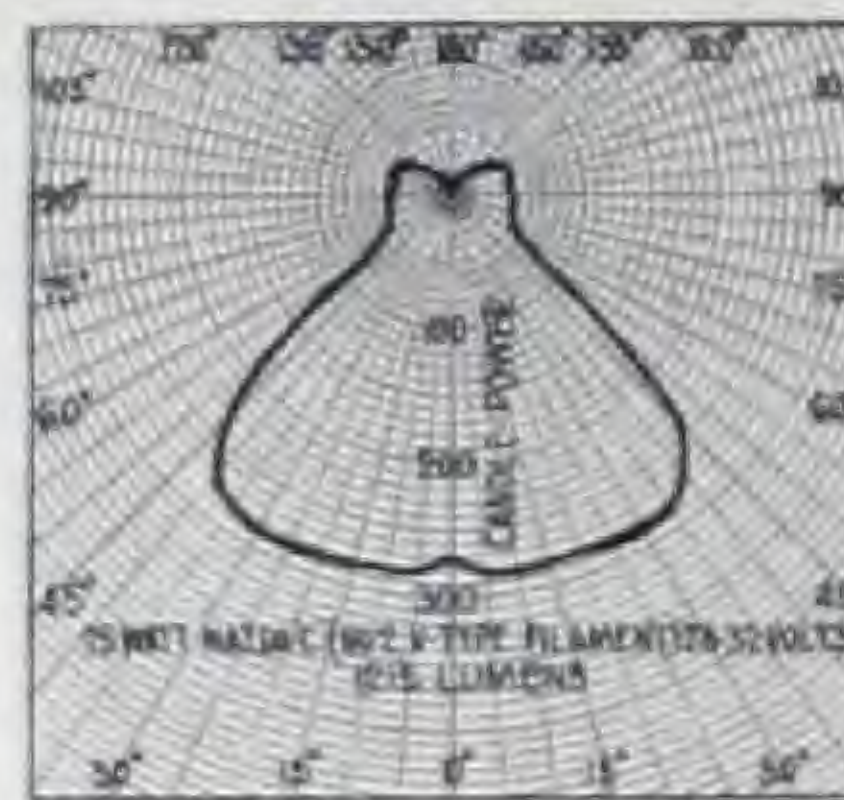
The No. 18221 should be used on half deck lighting and Nos. 18226 and 18246 for center deck lighting. The Nos. 18102, 18134 and 18136 were especially designed for electric street car lighting systems.



Nos. 18102, 18134-18136



Curve of No. 18134



Curve of No. 18226



Nos. 18221, 18226-18246

Super-Efficiency Reflectors for Mazda "C" Lamps



CSE Type
Super-Efficiency Extensive



Curve of CSE Type



Curve of CSI Type



CSI Type
Super-Efficiency Intensive

SCHEDULE "R" DISCOUNTS

Glass Only	List Price Each	Std. Quant.	Ship. Weight Std. Qt.	Dimensions			Mazda Lamp
				Diameter	Depth	Holder	
*18102	\$1.50	20	72	8 1/4"	5 3/4"	2 1/4"	94
*18134	1.05	40	80	7"	4 1/2"	2 1/4"	23-36
*18136	1.15	32	60	7 1/8"	5 1/8"	2 1/4"	56
*18221	1.00	30	80	6 1/4"	4 1/2"	2 1/4"	25
*18226	2.60	20	91	8 3/4"	6 1/2"	2 1/4"	50
*18246	4.45	8	67	10 3/8"	7"	4 1/2"	50
**CSE-75	1.40	10	34	7 1/2"	5 7/8"	2 1/4"-O	75-100
**CSE-100	1.75	8	36	8 1/8"	6"	2 1/4"-H	100†-150
**CSE-200	3.40	6	30	9 3/4"	7 3/8"	3 1/4"	200
**CSI-75	1.40	10	36	8"	5 7/8"	2 1/4"-O	75-100
**CSI-100	1.75	8	40	8 5/8"	6 1/8"	2 1/4"-H	100†-150
**CSI-200	3.40	6	30	10 1/8"	7 3/8"	3 1/4"	200

* Regularly furnished clear. For Velvet Finish add 10% to the list price.

** Regularly furnished velvet finish. † Use 3/8" socket extension with 100 watt lamp.

It is imperative that the proper holders be used with these light directors.

Indirect Lighting for Drafting Rooms, Control Rooms, Etc.

No. 741

This is an efficient indirect lighting unit composed of a reflector bowl, tripod holder (ice tong principle of holding) and conduit suspension stem with canopy. The finish of the unit is cadmium plate, the reflector bowl being finished in a high grade porcelain enamel. Adjustment to suit any reasonable spacing without loss in uniformity of light may be had by the setting of the collar on the tripod holder.

It is recommended that wide spacings and large lamps be used for economy. Recommended especially for lighting drafting rooms and similar locations. Fixture is furnished NOT wired and without lamp.

Illustration on page 53, price data on page 54. For light distribution curve see totally indirect curve on page 38.

MISCELLANEOUS HOLOPHANE SPECIFICS AND ACCESSORIES



Form O Uno No. 502
and Uno 506 Holder



Appleton No. 7319



No. 02223
Uses No. 0227 Filter



No. 02353
Uses No. 0229-S Filter



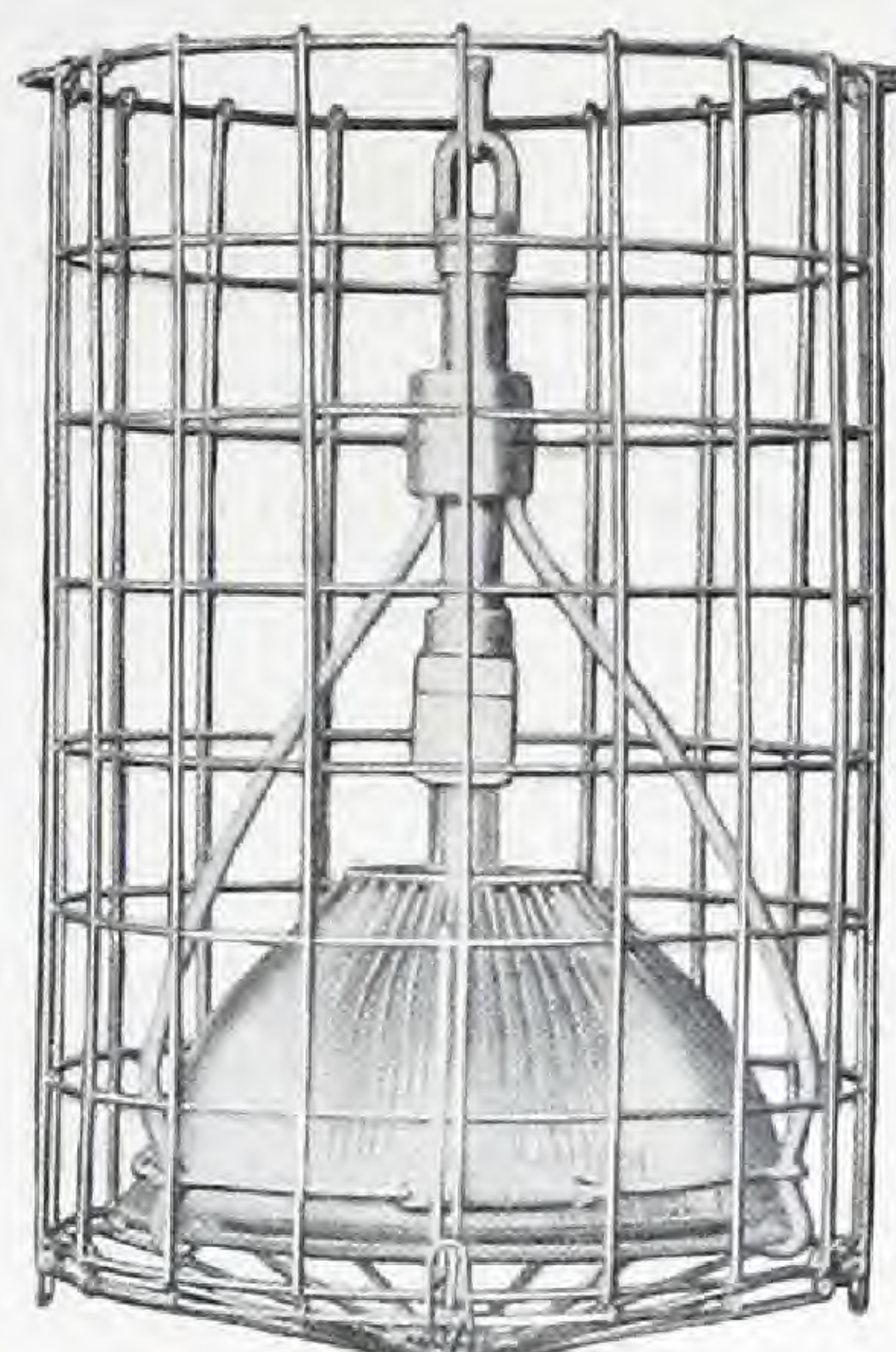
P and S
No. 119
O-Holder



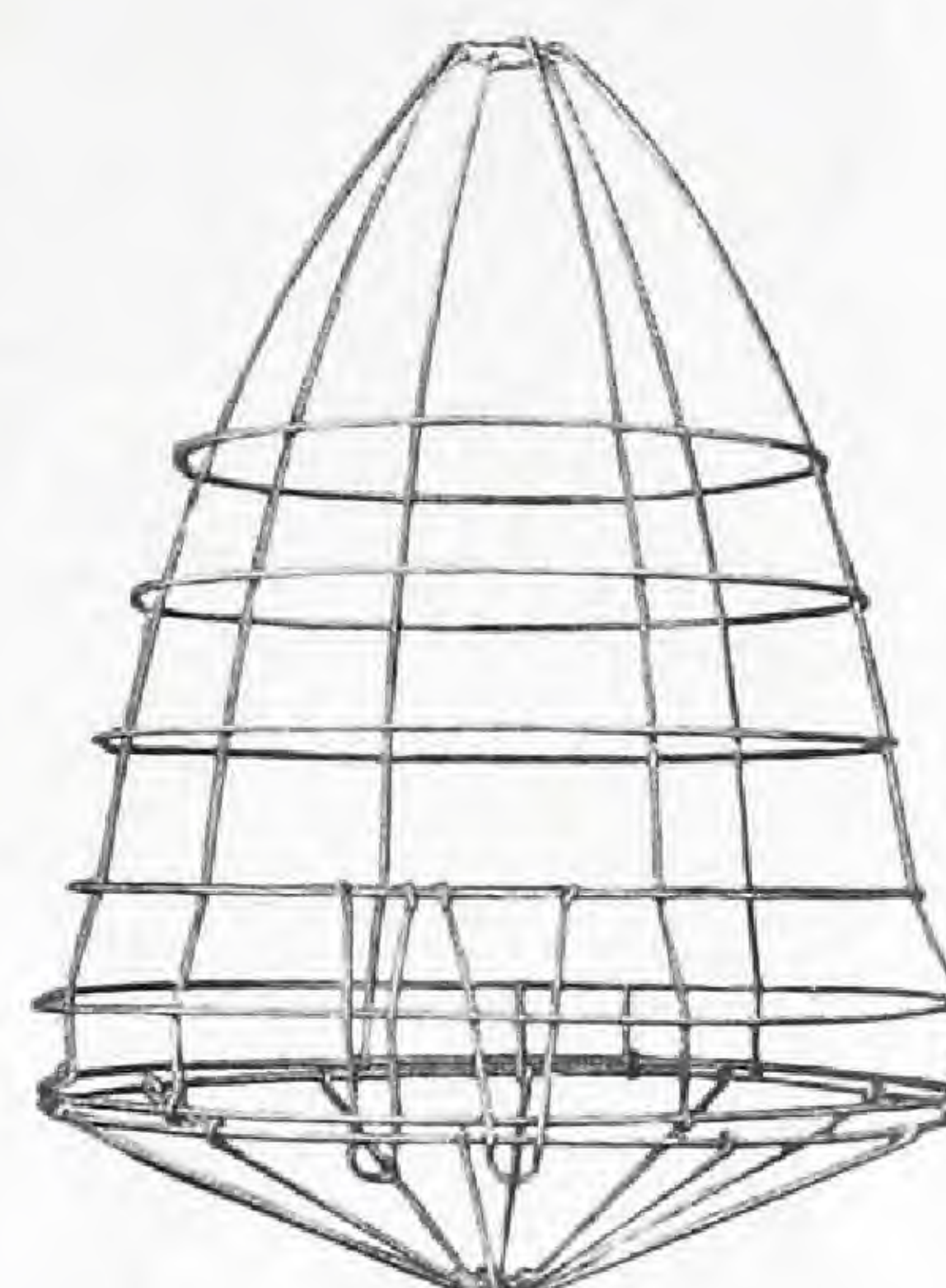
O to H Adapter



Form H Uno
No. 504 Holder



Wire Guard (C Type)



Wire Guard (S Type)



No. T-5



No. 741



Nos. XE
X1
XF



Nos. CXE-R
CXI-R
CXF-R



Nos. B-XE-R
B-XI-R
B-XF-R



Nos. B-2110-R
B-2120-R
B-2170-R



Nos. C-CSE-R
C-CSI-R



Nos. B-CSE-R
B-CSI-R

MISCELLANEOUS HOLOPHANE SPECIFICS AND ACCESSORIES

It is imperative that proper holders be used with Holophane Reflectors

Holophane Number	List Price Each	Standard Quantity	Schedule	Position	Mazda Lamp
UNO-502	\$.25	50	R	O	.....
UNO-504	.35	50	R	H	.....
UNO-506	.50	50	R	O	.....
***Appleton\ No. 7319\	.60	50	R	H	.....
S Type Wire Guards					
622-652-671-671-AL	3.65	5	I	.....	.....
681-AL	4.25	5	I	.....	.....
691-AL	4.85	5	I	.....	.....
C Type Wire Guards					
622-652-671-671-AL	6.05	5	I	.....	.....
681-AL	7.15	5	I	.....	.....
691-AL	10.45	5	I	.....	.....
P. & S. No. 119	.30	50	R	O	.....
O to H Adapter	.80	50	R	O to H	.....
§02223	8.75	8	I	.....	60 W. Traffic †
§02353	15.85	8	I	.....	600 & 1000 Lumen
0227	5.45	8	I	.....	.....
0229-S ††	12.55	8	I	.....	.....
*XE- 25	0.90	20	R	2 1/4"-O	25
*XE- 40	1.05	10	R	2 1/4"-O	40
*XE- 60	1.15	8	R	2 1/4"-O	50-60
*XI - 25	.90	20	R	2 1/4"-O	25
*XI - 40	1.05	10	R	2 1/4"-O	40
*XI - 60	1.15	8	R	2 1/4"-O	50-60
*XF- 25	.90	20	R	2 1/4"-O	25
*XF- 40	1.05	10	R	2 1/4"-O	40
*XF- 60	1.15	8	R	2 1/4"-O	50-60
*B-XE- 25-R	3.90	20	R	2 1/4"-O	25
*B-XE- 40-R	4.05	10	R	2 1/4"-O	40
*B-XE- 60-R	4.15	8	R	2 1/4"-O	50-60
*B-XI - 25-R	3.90	20	R	2 1/4"-O	25
*B-XI - 40-R	4.05	10	R	2 1/4"-O	40
*B-XI - 60-R	4.15	8	R	2 1/4"-O	50-60
*B-XF- 25-R	3.90	20	R	2 1/4"-O	25
*B-XF- 40-R	4.05	10	R	2 1/4"-O	40
*B-XF- 60-R	4.15	8	R	2 1/4"-O	50-60
**B-CSE- 75-R	4.40	10	R	2 1/4"-O	75-100
**B-CSE-100-R	4.75	8	R	2 1/4"-O	100
**B-CSI - 75-R	4.40	10	R	2 1/4"-O	75-100
**B-CSI-100-R	4.75	8	R	2 1/4"-O	100
**C-CSE- 75-R	4.20	10	R	2 1/4"-O	75-100
**C-CSE-100-R	4.55	8	R	2 1/4"-O	100
**C-CSI - 75-R	4.20	10	R	2 1/4"-O	75-100
**C-CSI-100-R	4.55	8	R	2 1/4"-O	100
*C-XE- 25-R	3.70	20	R	2 1/4"-O	25
*C-XE- 40-R	3.85	10	R	2 1/4"-O	40
*C-XE- 60-R	3.95	8	R	2 1/4"-O	50-60
*C-XI - 25-R	3.70	20	R	2 1/4"-O	25
*C-XI - 40-R	3.85	10	R	2 1/4"-O	40
*C-XI - 60-R	3.95	8	R	2 1/4"-O	50-60
*C-XF- 25-R	3.70	20	R	2 1/4"-O	25
*C-XF- 40-R	3.85	10	R	2 1/4"-O	40
*C-XF- 60-R	3.95	8	R	2 1/4"-O	50-60
B-2110-R	6.00	12	R	2 1/4"-O	75-100
B-2120-R	8.00	8	R	3 1/4"-O	100†-150
B-2170-R	8.25	8	R	4"	100†-150
T-5	50.85	5	I	.....	5-100 or 150
741	14.50	6	I	.....	75-1500

* Regularly furnished clear. For Velvet Finish add 10% to the list price.

** Regularly furnished velvet finish.

† Use 3/8" socket extension with 100 watt lamp.

*** Appleton No. 7319 2 1/4 Form H Holder for use on porcelain sockets.

§ For prices on ruby and green globes see pages 55 and 56.

†† For fixture No. 0229 equipped for multiple lamping, list price \$6.05 each.

‡ Used with 10 watt sign lamp, S-14 clear; 25 watt, P-19 clear; 60 watt traffic signal A-21 clear.

HOLOPHANE INDEX

Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page
A-755	\$29.00	I	1	42	C-XI-40-R*	3.85	R	10	53-54	0233	4.50	I	4	29
B-744-F	12.00	I	8	48	C-XI-60-R*	3.95	R	8	53-54	0234	4.00	I	8	29
B-755-FL	32.00	I	1	43	D-729-L	24.50	I	1	43	0234-L	4.00	I	8	29
B-2110-R	6.00	R	12	53-54	D-729-T	24.00	I	1	43	0238	4.00	I	4	29
B-2120-R	8.00	R	8	53-54	F-100-R	14.00	R	5	18-19	02176	5.50	R	8	21
B-2170-R	8.25	R	8	53-54	F-200-R	19.00	R	4	18-19	02180-A-S	13.00	I	4	30
B-CSE-75-R	4.40	R	10	53-54	F-300-R	20.00	R	3	18-19	02208	5.95	I	20	29
B-CSE-100-R	4.75	R	8	53-54	F-500-16"	42.00	R	2	18-19	02223-Crys.	8.75	I	8	53
B-CSI-75-R	4.40	R	10	53-54	F-500-18"	60.00	R	1	18-19	02223-Green	9.85	I	8	53
B-CSI-100-R	4.75	R	8	53-54	F-2336-C	22.00	I	1	46	02223-Ruby	10.95	I	8	53
B-XE-25-R*	3.90	R	20	53-54	F-6681-C	32.50	I	1	47	02328	8.15	I	8	29
B-XE-40-R*	4.05	R	10	53-54	F-6681-S	32.50	I	1	47	02338	11.75	I	4	29
B-XE-60-R*	4.15	R	8	53-54	H-755-FL	25.00	I	1	43	02353-Crys.	15.85	I	8	53
B-XF-25-R*	3.90	R	20	53-54	H-755-TF	32.00	I	1	43	02353-Green	16.85	I	8	53
B-XF-40-R*	4.05	R	10	53-54	H-761-4-FL	74.00	I	1	47	02353-Ruby	18.05	I	8	53
B-XF-60-R*	4.15	R	8	53-54	H-761-4-FL (1000)	85.00	I	1	47	02470	9.25	I	8	29
B-XI-25-R*	3.90	R	20	53-54	H-790-2	23.50	I	1	51	02472	9.25	I	8	29
B-XI-40-R*	4.05	R	10	53-54	H-790-2F	23.50	I	1	51	02476	8.65	I	8	29
B-XI-60-R*	4.15	R	8	53-54	H-CSE-100	3.45	I	8	27	02480	16.10	I	4	29
C-1011	9.40	I	3	46	H-CSE-200	4.65	I	6	27	02486-S	13.45	I	4	31
C-1211	11.50	I	3	46	HF-729	15.00	I	4	42	02490-JDW	20.70	I	4	30
C-1411	18.75	I	3	46	J-729	17.00	I	4	42	02490-S	13.45	I	4	30
C-2110-R	5.80	R	12	16-17	R-500	29.00	R	4	20	0310	7.50	I	3	46
C-2120-R	7.50	R	8	16-17	R-1000	50.00	R	4	20	0312	8.00	I	3	46
C-2130-R	14.00	R	4	16-17	RN-300	17.00	R	4	20	0314	11.50	I	3	46
C-2133-R	14.00	R	4	16-17	S-2110-R	7.80	R	12	16-17	0362	2.00	I	8	30-31
C-2140-R	20.00	R	3	16-17	S-2120-R	9.50	R	8	16-17	0362-L	2.00	I	8	30-31
C-2140-6"-R	20.00	R	3	16-17	S-2130-R	16.00	R	4	16-17	0363-BC	1.00	I	8	30-31
C-2143-R	20.00	R	3	16-17	S-2133-R	16.00	R	4	16-17	0366	1.25	R	8	21
C-2143-6"-R	20.00	R	3	16-17	S-2140-R	22.00	R	3	16-17	0369	3.00	I	4	30-31
C-2170-R	8.00	R	8	16-17	S-2140-6"-R	22.00	R	3	16-17	0369-L	3.00	I	4	30-31
C-2172-R	8.00	R	8	21	S-2143-R	22.00	R	3	16-17	0370	2.50	I	4	30-31
C-2180-R	14.50	R	4	16-17	S-2143-6"-R	22.00	R	3	16-17	0383	30.00	R	1	18-19
C-7326-R	17.50	R	5	39	S-2170-R	10.00	R	8	16-17	0386	22.00	R	2	18-19
C-7346-R	24.00	R	4	39	S-2180-R	16.50	R	4	16-17	04177-A	41.50	R	4	34-35
CE-900	14.00	R	4	11	S-7326-R	20.00	R	5	39	04333-A	39.00	R	4	34-35
CE-910	20.00	R	3	11	S-7346-R	28.00	R	4	39	04338-A	24.80	R	4	34-35
CF-100-R	12.50	R	5	18-19	SE-900	16.00	R	4	11	04376-A	25.80	R	4	34-35
CF-200-R	18.00	R	4	18-19	SE-910	22.00	R	3	11	04377-A	26.80	R	4	34-35
CF-300-R	19.00	R	3	18-19	SL-200	12.00	R	4	14	043384	39.90	R	4	36
CSE-75	1.40	R	10	52	ST-200	12.00	R	4	14	043774	41.90	R	4	36
CSE-100	1.75	R	8	52	T-5	50.85	I	5	53-54	0480†	5.00	R	5	18-19
CSE-100-BC	3.95	I	8	27	T-981-3	25.00	R	1	14	0481†	6.00	R	4	18-19
CSE-200	3.40	R	6	52	W-745-1	13.00	I	4	48	0482†	7.00	R	3	18-19
CSE-200-BC	5.65	I	6	27	W-792	13.00	I	8	50	0484	11.00	R	5	39
CSI-75	1.40	R	10	52	W-794	22.00	I	1	50	0485	15.00	R	4	39
CSI-100	1.75	R	8	52	W-796-1	13.00	I	4	49	0500†	3.50	R	5	18-19
CSI-200	3.40	R	6	52	W-796-2	22.00	I	1	49	0501†	5.00	R	4	18-19
C-CSE-75-R	4.20	R	10	53-54	XE-25*	.90	R	20	53-54	0502†	6.00	R	3	18-19
C-CSE-100-R	4.55	R	8	53-54	XE-40*	1.05	R	10	53-54	0503	8.50	R	5	39
C-CSI-75-R	4.20	R	10	53-54	XE-60*	1.15	R	8	53-54	0504	11.00	R	4	39
C-CSI-100-R	4.55	R	8	53-54	XF-25*	.90	R	20	53-54	0571†	4.80	R	12	16-17
C-XE-25-R*	3.70	R	20	53-54	XF-40*	1.05	R	10	53-54	0572†	5.00	R	8	16-17
C-XE-40-R*	3.85	R	10	53-54	XF-60*	1.15	R	8	53-54	0573†	5.50	R	4	16-17
C-XE-60-R*	3.95	R	8	53-54	XI-25*	.90	R	20	53-54	0574†	7.00	R	3	16-17
C-XF-25-R*	3.70	R	20	53-54	XI-40*	1.05	R	10	53-54	0575†	7.00	R	3	16-17
C-XF-40-R*	3.85	R	10	53-54	XI-60*	1.15	R	8	53-54	0578†	6.00	R	4	16-17
C-XF-60-R*	3.95	R	8	53-54	0227	5.45	I	8	53	0591†	2.80	R	12	16-17
C-XI-25-R*	3.70	R	20	53-54	0229-S	12.55	I	8	53	0592†	3.00	R	8	16-17
					0231	3.50	I	20	29	0593†	3.50	R	4	16-17
					0232	4.50	I	8	29	0594†	5.00	R	3	16-17
										0595†	5.00	R	3	16-17

* Add 10% to list price if velvet finish is to be furnished.

† These units are packed in individual cartons.

** Add \$3.65 list additional for aluminum covers spun on permanently.

HOLOPHANE INDEX

Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page	Holophane No.	List Price Each	Sched.	Std. Quant.	Page
0596†	3.50	R	8	21	2143†	15.00	R	3	16-17	6552-AL	11.50	I	5	23
0598†	4.00	R	4	16-17	2143-6"†	15.00	R	3	16-17	6573	1.45	I	8	26
0641	2.45	I	8	26	2170†	4.50	R	8	16-17	6573-AL	5.10	I	8	26
0643	1.85	I	6	26	2172†	4.50	R	8	21	6575	2.45	I	6	26
0644	3.35	I	10	26	2176†	4.25	R	8	21	6575-AL	6.10	I	6	26
0650	2.50	I	8	27	2180†	10.50	R	4	16-17	6583	7.60	I	10	26
0651	2.00	I	6	27	2180-A	10.50	I	4	30	6583-AL	11.25	I	10	26
0654	2.50	I	8	27	2208**	2.45	I	20	29	6585	3.85	I	4	28
0655	3.50	I	8	27	2223-Crys.	3.30	I	8	53	6585-AL	6.05	I	4	28
0656	3.00	I	6	27	2223-Green	4.40	I	8	53	6588	4.25	I	10	26
0657	2.00	I	8	27	2223-Ruby	5.50	I	8	53	6588-AL	7.90	I	10	26
0671	3.50	I	5	23	2328**	3.65	I	8	29	6671	6.05	I	5	25
0672	3.50	I	5	25	2338**	7.25	I	4	29	6671-AL	10.30	I	5	25
0672-E	4.25	I	5	23	2353-Crys.	3.30	I	8	53	6681-AL	11.50	I	5	24
0673	4.25	I	5	24	2353-Green	4.40	I	8	53	6690-AL	19.80	I	3	24
0674	10.45	I	4	24	2353-Ruby	5.50	I	8	53	6691-AL	19.80	I	4	24
0674-E	10.45	I	3	23	2470**†	5.25	I	8	29-30	6692-AL	19.80	I	3	23
0675	10.45	I	3	24	2472**†	5.25	I	8	29-31	671†	9.55	I	5	25
0685	3.85	I	4	28	2476**†	4.65	I	8	29-31	681 Clear	11.50	I	5	24
0865	3.60	R	4	33	2480**	12.10	I	4	29	681-AL†	15.75	I	5	24
0866	5.75	R	4	33	2486**†	10.45	I	4	31	681-AL-W	29.50	I	5	24
0867	13.35	R	4	35	2490**†	10.45	I	4	30	685	7.70	I	4	28
0873	20.00	R	4	36	3 D.S.L.S.§	72.50	I	1	41	685-AL	9.90	I	4	28
0875	5.80	R	8	35	4177†	16.50	R	4	34-35	690-AL	30.25	I	3	24
0878	12.60	R	4	35	4333	14.00	R	4	34-35	691-AL†	30.25	I	4	24
0881-A	16.80	R	4	35	4334	5.00	R	8	32-33	691-AL-W	44.00	I	5	24
0882-A	25.00	R	4	35	4337	3.50	R	8	32-33	692-AL	30.25	I	3	23
0890	5.50	R	8	33	4338	8.00	R	4	34-35	7 M.S.L.S.§	168.50	I	1	41
0891	4.50	R	8	33	4376	9.00	R	4	34-35	7 M.S.L.S.§§	217.00	I	1	41
0897	5.50	R	8	33	4377	10.00	R	4	34-35	7180-A	14.00	R	4	20
0904	3.50	R	8	33	5 M.S.L.S.§	120.50	I	1	41	7184	4.00	R	4	36
0905	3.50	R	8	33	5 M.S.L.S.					7190-A	20.00	R	4	20
0936	.65	R	8	26	§§	153.00	I	1	41	7322†	9.00	R	5	18-19
1011	1.90	I	3	46	622†	9.55	I	5	23	7326†	9.00	R	5	39
11 M.S.L.S.§	264.50	I	1	41	622-AL†	13.80	I	5	23	7344†	13.00	R	4	18-19
11 M.S.L.S.					6484	7.45	I	8	27	7346†	13.00	R	4	39
§§	345.00	I	1	41	6488	4.95	I	8	27	7366	20.00	R	2	18-19
1211	3.50	I	3	46	6488-BC	8.45	I	8	27	7388	30.00	R	1	18-19
1245	7.90	R	4	36	652†	11.50	I	5	23	741	14.50	I	6	54
1411	7.25	I	3	46	652-AL†	15.75	I	5	23	742†	24.00	R	6	38
15 M.C.L.S.	918.50	I	1	40	6522	6.05	I	5	23	830†	8.00	R	8	33
18 M.C.L.S.	979.00	I	1	40	6522-AL	10.30	I	5	23	832†	10.50	R	8	33
18102*	1.50	R	20	52	653	2.10	I	8	26	833	10.50	R	8	33
18134*	1.05	R	40	52	653-AL	5.75	I	8	26	834	7.00	R	8	33
18136*	1.15	R	32	52	6531	3.90	I	8	26	835	7.00	R	8	33
18221*	1.00	R	30	52	6531-AL	7.55	I	8	26	922	4.50	R	8	13
18226*	2.60	R	20	52	6533	3.30	I	8	26	938†	6.00	R	8	13
18246*	4.45	R	8	52	6533-AL	6.95	I	8	26	944†	6.00	R	8	13
21 M.C.L.S.	1160.50	I	1	40	654	3.10	I	6	26	955-1	44.00	I	1	12
2110†	3.00	R	12	16-17	654-AL	6.75	I	6	26	955-3	110.00	I	1	12
2120†	4.50	R	8	16-17	6541	4.90	I	6	26	963	3.00	R	8	13
2130†	10.50	R	4	16-17	6541-AL	8.55	I	6	26	981	2.00	R	30	13
2133†	10.50	R	4	16-17	6543	4.30	I	6	26	983	3.00	R	8	13
2140†	15.00	R	3	16-17	6543-AL	7.95	I	6	26					
2140-6"†	15.00	R	3	16-17	6552	7.25	I	5	23					

* Add 10% to list price if velvet finish is to be furnished.

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** Add \$3.65 list additional for aluminum covers spun on permanently.

§ Exposed type.

§§ Flush type.

NOTE:—CHAIN HANGERS CAN BE FURNISHED ON REFLECTOR REFRACTORS (PAGE 16-17) AND FILTERLITES (PAGES 18-19) AT NO INCREASE IN PRICE.

LIST OF PUBLICATIONS

Holophane Engineering Service

In the design of a highly scientific product, such as Holophane, it is necessary to make certain assumptions as to its method of use and in order to get the maximum service from such equipment, its installation must conform to the instructions of the designer. It is for this reason that the Holophane Company maintains a competent engineering staff to co-operate with those who contemplate the use of Holophane equipment.

HOLOPHANE PUBLICATIONS:

The following special booklets may be obtained from the Holophane Company:

- Bulletin No. 344 —The Lighting of Schools.
- 350 —"Streets That Are Safe."
- 375-K—Holophane Datalog.
- 448 —Industrial Lighting.
- 700 —Holophane Traficons.
- 1000 —Lighting Specifics for Library Bookstacks, etc.
- 1100 —The City with Planned Street Lighting.
- 1200 —Lighting Specifics for Hospitals.
- 1250 —The "Realite."
- 1300 —"Gloria."

The following folders and mailing pieces are also available:

- Form No. 470-B—Hospital Lighting Specifics.
- 480-B—Holophane Show Window Lighting Specifics.
- 491-C—Holophane No. T-981-3.
- 830 —"It's Eight-Thirty."
- 830-B—Put a Light Behind Your House.
- XU-100 —Medical Examination Light.

Special Engineering folios are also available explaining:

Holophane Lighting Specifics for

Built-in Lighting.	Outdoor Substations.
Cotton Mills.	Printing Plants.
Distilleries &	Rayon Mills.
Rectification Plants.	Silk Mills.
Generating & Substations.	Sports Areas.
High-Bays.	Storage Areas.
Industrial Yards.	Surgeries.
Oil Refineries.	Woolen Mills.
Outdoor Areas.	

The following films for use with the Bray and other projectors can be furnished on request at a nominal charge:

- Film No. 1161—Holophane Industrial Lighting.
- 1263—Holophane Scientific Illumination.
- 1308—Productive Lighting in Industry.
- 1329—Scientific Street Lighting.
- W-78—Modern Retailing Success.
- SF1—The Lighting of Educational Institutions.